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ABSTRACT

The northern portion of the Big Blue River Basin is located in southeastern Nebraska, ranking among the best farm land in the state. Despite its excellent resources for agriculture, the basin suffers from a number of problems related to water and agriculture, such as: (1) precipitation varies during the growing season, stimulating the demand to irrigate; (2) only 40 percent of the land has been treated by proper farming methods; and (3) the basin lacks water recreation areas. This study focuses on these problems. Four separate study areas within the basin identified. A random sample of respondents was drawn from each survey area. This population responded to a questionnaire of 23 to 24 Likert-type attitude statements and a page of demographic questions. Following the surveys, programs to test methods of communication were commenced in each of the four survey regions. After the communication projects, another random sample was drawn from each area to test net attitude change. A number of conclusions were drawn from this survey, including: (1) attitudes surveyed tended to be generally favorable and (2) an average of 35 percent of re-interview respondents per statement changed their attitude between surveys. Appendices are included. (TK)

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Measuring and Developing Methods of Attitude and Motivational Change in Implementing the Big Blue River Basin Water Plan.

Doane College
Crete, Nebraska
1973

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MEASURING AND DEVELOPING METHODS OF ATTITUDE AND MOTIVATIONAL CHANGE IN IMPLEMENTING THE BIG BLUE RIVER BASIN WATER PLAN

by

Edward J. McPartland

Doane College

1973

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INTRODUCTION

The northern portion of the Big Blue River Basin is located in southeast Nebraska and contains approximately 2,920,000 acres of land. About 83 percent of the land is gently rolling loess plain which is generally adaptable to irrigation and also ranks among the best farm land in the state. The other 17 percent of the land, located in the extreme eastern part of the basin, is composed of loess drift hills with limited irrigation potential. Agriculture directly represents about one-third of the employment of the basin, and many small-town businesses act, in part, as trade and service centers for agriculture. Much of the basin's economy, then, is agriculturally orientated.

Despite its excellent resources for agriculture, the basin suffers from a number of problems related to water and agriculture. Biennially, there is too much water as the Big Blue River and its tributaries ravage farm land and small towns, aggravated by debris-clogged and silt-laden river channels. Estimated damages to urban property from 1940 to 1965 totaled $3,327,500. It is further estimated that another $2,000,000 in damages to both rural and urban property was sustained during a 1967 flood.[1] The variability of precipitation during the growing season has stimulated the demand for irrigation. As a result of increased ground water irrigation, water tables have dropped from 10 to 25 feet in portions of the west basin. Should these water tables become depleted, some economic difficulties for the western part of the basin might ensue. Only about 40 percent of the land in the basin has been treated by proper farming methods, such as terracing and contouring. Consequently, the stream system has been severely polluted with silt. Other sources of pollution are feed-lots, farm chemicals, irrigation return flows, and municipal wastes. The basin sorely lacks water recreation areas, and the quality of existing surface water is relatively poor.

This research was inspired by the absence of much progress with the aforementioned problems. The research staff desired to ascertain the general public's attitudes concerning these problems and to determine what action, if any, the general public would support. The staff was also interested in finding ways of communicating knowledge about water conservation problems to the public. Thus, three principal objectives were developed for the research.

1. To determine what demographic factors seem to be most related to people's attitudes toward water conservation.
2. To discover public attitudes toward various issues concerned with water conservation.
3. To test and compare methods of communicating knowledge about water conservation problems.

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[1] Nebraska Soil and Water Conservation Commission Planning Division, Comprehensive Report on Land and Water Resources of the Big Blue River Basin, Lincoln, State of Nebraska, 1968, pp. 54-55.

PLAN OF RESEARCH

After several months of pretesting, a questionnaire for research was developed consisting of 23 to 24 Likert-type attitude statements and a page of demographic questions. (See Appendix I). This questionnaire was then administered to randomly selected respondents in all surveys conducted for this project. Four separate survey areas were delineated to provide a variety of inter-basin problems and separate test areas for methods of communication. Area 1 is located in the northwest corner of Saline County and includes the rural townships of Lincoln, Monroe, Turkey Creek, a small portion of Friend township, and the town of Friend, population 1,126. Agriculture predominates in this area, and our sample indicated that 48 percent of the farmers were ground water irrigators. Also, the proposed Shestak Reservoir would inundate some land in Monroe township. Approximately 50 percent of the farmers were livestock feeders. Area 2 includes all of Seward County except portions of the far eastern townships which lie outside the basin. The city of Seward has a population of 5,294. The area contains two proposed reservoir sites, some flood prone land, and a declining water table due to irrigation, in the west central townships. In our sample, 43 percent of the farmers were ground water irrigators, and about 61 percent were livestock feeders. Area 3 is comprised of the small town of Henderson, population 901, plus Brown, Henderson, portions of Hays and Baker townships in York County, Farmers Valley and parts of Orville and Beaver townships in Hamilton County. The area has a problem of severe water table decline. In our sample, about 83 percent of the farmers were ground water irrigators and 52 percent were livestock feeders. Area 4 contains the city of Beatrice, population 12,389, plus Grant, Holt, Hanover, Filley,Sherman, Logan, Rockford, Midland, Riverside, Sicily, Elm, Lincoln and Blakely Townships in Gage County. The area has been subject to some flooding and has completed many small watershed projects. In our sample about 15 percent of the farmers were ground water irrigators and 65 percent were livestock feeders.

A random sample of respondents was drawn from each survey area. The sample size was designed to insure that 95 samples out of 100 would not vary more than 5 percent in either direction from the actual population.[2] When the initial surveys were completed, programs to test methods of communication were commenced in each of the four survey regions. In the Friend area, literature concerning water conservation was carried to each residence in the survey area and presented, if possible, directly to the resident. A succession of public meetings featuring water resources experts was held in the Seward area. A series of newspaper articles concerning water conservation was published in the Henderson and Beatrice newspapers. Following the communications projects, another random sample was drawn for each area, to test net attitude change; however, one-half of the sample was drawn from people who had been previously interviewed. This panel technique was utilized to study the pattern of attitude movement and gross change. The new respondents were used as a control to check for sensitization effects from the first survey. The final surveys were completed in the spring of 1972.

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[2] In areas 1 and 3, the regularly computed sample size was more than 10% of the number of units to be sampled. This allowed a reduction in sample size with retention of the same confidence limits using the following formula:

$$n^1 = \frac{n}{1 + \phi}$$

The analysis is presented in three parts which consider salient demographic relationships to attitudes, public attitudes on water conservation issues, and the comparative effects of different methods of communication. Some explanations of methodology and citations of previous research will be found in each section.

PART I

DEMOGRAPHIC ANALYSIS

Research in the social sciences has often found that differences in attitudes are closely related to demographic characteristics. Such differences are also evident in attitudes toward water conservation and development. A study in South Dakota found that non-farmers and people with more education had attitudes more favorable toward a water resources development program than farmers and people with less education.[3] An investigation in Mississippi measuring attitudes toward watershed development indicated that favorable attitudes had a tendency to coincide with lower ages, more years of education, membership in organizations, and a high economic level of living. Less favorable attitudes were prevalent with older age groups, fewer years of education, lack of organizational membership, and a lower economic level of living.[4]

For this study of attitudes in the Blue River Basin, attitude answers were scored on a five point scale with five being most favorable, four favorable, three undecided, two unfavorable, and one most unfavorable.[5] For the demographic analysis, attitude scores for each respondent were summed and ranked from most positive (high) concerning water conservation, to least positive (low) concerning water conservation.[6] Respondents were then divided into approximately four equal groups: high, medium high, medium low, and low.[7] The four attitude groups and various demographic categories were then analyzed by a chi-square test to determine if there were any differences within demographic categories across the range of attitude scores, and whether such differences occurred by chance.[8] Percentages on each demographic variable were also included to show the direction of relationships. The analysis considered the variables of direct farming interest, residence, education, occupation, income, age, religion, years in the community, property ownership, sex, nationality, political parties, size of family, voter versus non-voter, membership in organizations, size of farm holdings, livestock feeding, and irrigation. The above procedure was followed for each separate survey area.[9]

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[3] John D. Photiadis, *Attitudes Toward the Water Resources Development Program in Central South Dakota*, Brookings, S.D., South Dakota State University, 1960, pp. 11-12.

[4] John H. Peterson, Jr. and Peggy J. Ross, *Changing Attitudes Toward Watershed Development*, State College, Miss., Water Resources Research Institute, Mississippi State University, 1971, p. 32.

[5] The attitude statements and the scores assigned for various answers appear in Appendix I.

[6] Sixteen statements were selected by a T-test analysis to form the attitude scale used for the demographic analysis. These statements are marked by an asterisk in Appendix I.

[7] Sometimes the groups were not exactly equal because of tied scores so that the division was made at the nearest score change.

[8] Statistical significance was considered established where the probability that the differences occurred by chance was 5 percent or less.

After the tabulations by area were completed, the most important variables were selected for further analysis. Although it was possible to combine all survey areas in the demographic analysis to find more variables to be statistically significant, such a procedure would have included more variables of marginal importance because chi square significance increases in proportion to sample size. Thus, a more conservative use of the test was employed to include only the most important variables. To qualify for further analysis a variable had to be statistically significant in three or more survey areas in the area-wide attitude analysis and in ten or more cases on the individual statement analysis.[10] This procedure resulted in six key variables which are presented in Table I.

TABLE I

Key Demographic Variables

	No. of Areas Significant	No. of Significant Cases
Occupation	4	42
Residence (Rural-Town)	4	41
Direct Farming Interest	4	36
Education	4	30
Age	3	19
Income	3	18

Once the most important variables were identified, survey areas were combined to facilitate comparison of variables through the construction of three-variable tables which require a much larger number of respondents for a valid analysis.

The analysis indicated that occupation, residence, and direct interest in farming were more closely associated with attitude differences than any other variables. This was true with both simple rankings as in Table I and in multivariable tables. All three variables were related to agriculture. Farming was one of the major occupational groups. Rural was defined as living in the country outside of incorporated towns and included predominately farmers. Town residents included all people living in incorporated towns. Direct farming interest was slightly more related to economic interest and included all people who owned, rented, or actually worked farm land. No direct interest included all other people. Results indicated that economic interest in farming, actually living on a farm, or possibly having farmed for many years greatly influenced attitudes. Generally these attitudes were less favorably inclined on conservation issues than those of other respondents. This does not mean that most farmers were opposed to conservation. On many statements a majority or at least a plurality of farmers indicated favorable attitudes. On some issues a majority of farmers indicated that they had unfavorable attitudes. The statement simply means that as a group, farmer's attitudes were less favorable on water conservation issues than other groups. Such results became obvious when these variables were cross-tabulated with other variables.

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[9] All statistically significant tables for each survey area are presented in Appendix II. Because there were 28 such tables, they were excluded from the main text.

[10] Demographic variables were compared on 18 statements for the four survey areas allowing for the possibility of 72 cases of statistical significance for each variable.

Table II presents a comparison of residence and education on conservation attitudes. The percentage columns represent a division of respondents into four quartiles on the attitude scale from most favorable to least favorable.

TABLE II

A COMPARISON OF RESIDENCE, EDUCATION, AND ATTITUDE SCORES[11]

		Attitudes Percentage					
Residence	Education	Low	Medium Low	Medium High	High	N	
Town	0-8 years	38.1	36.2	13.0	12.5	207	
	9-11 years	24.4	27.5	28.5	19.3	98	x^2 = 166.21
	12 years	14.0	25.1	30.3	30.3	306	at 12 df
	13-14 years	9.8	21.2	27.6	41.0	112	$p < .001$
	15+ years	6.1	15.3	27.6	50.7	130	v = .764
						853	
Rural	0-8 years	43.8	36.7	9.1	10.2	98	
	9-11 years	32.6	36.9	15.2	15.2	46	x^2 = 23.82
	12 years	36.3	30.3	17.8	15.4	168	at 12 df
	13-14 years	28.5	25.7	25.7	20.0	35	$p < .05$
	15+ years	15.0	20.0	45.0	20.0	20	v = .441
						367	
						1220	

x^2 = 220.950 at 27 df $p < .001$

The table shows that people in town had more favorable attitudes than people in the rural areas. Also, as educational level increased, favorable attitudes increased. However, more interesting was the fact that the rural group was more homogeneous than the town group. Education, the fourth-ranked variable, had less influence in the rural area than in town. This was apparent from the percentages, chi-square values, and v scores which showed differences in town by education to be much greater.[12] When educational levels between town and rural areas were compared, the percentages showed a great difference in attitudes. In town, 50 percent of those people with 15 or more years of formal education were found in highest and most favorable attitude quartile. Among people with 15 or more years of education in the rural areas, only 20 percent were grouped in the highest quartile. These figures suggest that occupation, residence, and economic interest, probably have a greater influence than education on conservation attitudes in rural areas. However, education seems to have a greater influence on attitudes in the towns. Table III presents a comparison of direct farming interest and education on water conservation attitudes. The results are similar to Table II except that the direct farming interest category included over 100 people living in town who own farm land. These people apparently had attitudes slightly less favorable than the average town dweller but more favorable than the average rural dweller. When compared to the rural-town categories, the result of the change was to improve the attitude scores in both the no farming interest and farming interest categories as compared to the town and rural categories.

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[11] x^2 below the table refers to the chi-square value for the whole table. x^2 and v at side refer only to values for that section of the table.

TABLE III

A COMPARISON OF DIRECT FARMING INTEREST, EDUCATION AND ATTITUDE SCORES

		Attitudes Percentage					
Interest	Education	Low	Medium Low	Medium High	High	N	
Non-Farm	0-8 years	37.3	35.4	13.1	13.2	158	
	9-11 years	24.4	24.4	31.3	19.7	86	$x^2 = 114.20$
	12 years	12.1	24.3	30.6	32.7	287	at 12 df
	13-14 years	8.2	23.7	27.8	40.2	97	$p < .001$
	15+ years	6.4	14.8	23.1	55.5	108	$v = .682$
						736	
Farm	0-8 years	42.8	37.4	9.5	10.2	147	
	9-11 years	31.6	40.0	13.3	15.0	60	$x^2 = 56.79$
	12 years	36.8	31.0	18.7	13.3	187	at 12 df
	13-14 years	26.0	20.0	26.0	28.0	50	$p < .001$
	15+ years	9.5	19.0	47.6	23.8	42	$v = .482$
						486	
						1222	

$x^2 = 249.182$ at 27 df $p < .001$

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[12] Since larger sample sizes result in higher chi-square scores, Cramer's V was used to make the x^2 scores comparable. Formula

$$V^2 = \frac{X^2}{N} \times \overset{r\,-\,1}{\underset{c\,-\,1}{\text{or}}}\ (\min)$$

Min refers to either r-1 or c-1 whichever is smaller. The value of .764 for the town group indicates greater significance than .441 in the rural area. Values can range from 0 to 1.00.

A chi-square comparison of residence and direct farming interest with occupation was not possible because the rural-town dichotomy excluded too many occupations from sub-sections of the table for a valid test. However, the tables for each area on occupation in Appendix II consistently showed that people who were farming had less favorable attitudes than other occupational groups. The retired group showed a very similar configuration which probably indicates that a sizeable number of that group farmed before retirement. These two groups accounted for most of the differences from other occupations in the tables, and there was no statistically significant difference between these two groups. This is further evidence that the less favorable attitude scores in this study are related to the cultural and economic aspects of rural life as opposed to other demographic factors.

An analysis of the relationship between residence and income found results consistent with those previously mentioned. These are presented in Table IV.

TABLE IV

A COMPARISON OF RESIDENCE, INCOME, AND ATTITUDE SCORES

		Attitudes Percentage					
Residence	Income	Low	Medium Low	Medium High	High	N	
	$0-5,000	35.2	32.8	17.4	14.3	292	
	$5,001-10,000	11.0	24.1	28.6	36.1	335	$x^2 = 79.06$
Town	$10,001-15,000	12.3	15.7	29.4	42.4	146	at 9 df
	$15,001 +	14.8	32.9	25.5	26.5	94	$p < .001$
						867	$v = .426$
	$0-5,000	33.7	38.9	15.5	11.6	77	
	$5,001-10,000	34.5	29.5	18.3	17.6	142	$x^2 = 5.63$
Rural	$10,001-15,000	38.8	25.0	20.8	15.2	72	at 9 df
	$15,001 +	41.4	31.7	12.1	14.6	41	$p < .80$
						332	$v = .183$
						1199	

$x^2 = 165.088$ at 21 df $p < .001$

As expected, attitudes in town were more favorable than attitudes in the rural area. The pattern for incomes indicated a very significant difference in attitudes between income groups in town with middle income groups being much more favorable. However, the lowest income group in town was much less favorable and had a response pattern very similar to the rural area. These results are presented in Table IV. When combined with the age variable, this suggests the presence of a large number of retired residents who probably farmed for a number of years and hold views similar to people in agriculture. The high income group in town was also less favorable than the middle income groups and probably included people who own farm property. Within the rural area, there was virtually no difference at all between income groups. This again illustrates the homogeneity of the rural area and suggests that association with farming has a greater influence on rural attitudes than income. The comparison of direct farming interest and income in Table V shows a similar pattern except that the inclusion of townspeople in the direct farm interest category increased unfavorable attitudes in the lowest income group and favorable attitudes in the highest group, reducing the homogeneity of the rural group. It appears that high income people in town who own farm property have slightly more favorable attitudes than high income people in the countryside. However, low income people from town, with a direct farming interest appear to have the least favorable attitudes. These are probably older people with a small interest in farm land or farm laborers.

TABLE V

A COMPARISON OF DIRECT FARMING INTEREST, INCOME, AND ATTITUDE SCORES

Interest	Income	Attitudes Percentage Low	Medium Low	Medium High	High	N	
Non-farm	$0-5,000	32.4	32.8	17.6	17.2	250	$x^2 = 89.95$
	$5,001-10,000	10.5	21.7	29.7	37.9	303	at 9 df
	$10,001-15,000	9.0	18.1	27.2	45.4	121	$p < .001$
	$15,001 +	14.8	32.4	25.6	27.0	74	$v = .600$
						748	
Farm	$0-5,000	40.4	37.1	15.7	6.6	121	$x^2 = 19.60$
	$5,001-10,000	31.0	32.7	18.3	17.8	174	at 9 df
	$10,001-15,000	36.0	19.5	25.7	18.5	97	$p < .05$
	$15,001 +	31.6	33.3	15.0	20.0	60	$v = .359$
						452	

$x^2 = 172.099$ at 21 df $p < .001$

The analysis of residence and age presented in Table VI again confirmed the idea of rural influence on attitudes. There was some difference in rural attitudes by age group with the older age groups having the least favorable attitudes. However, this difference was not statistically significant. In the town section of the survey, there was a great difference between the oldest age group and the two younger age groups with the latter having much more favorable attitudes. In fact, the attitude pattern for the oldest town age group was very similar to patterns in the rural area. This suggests the possibility that many of the oldest group in town are retired and have had farming experience which is reflected in their attitudes. During interviews many people who were retired indicated that they had previously farmed.

When education and income were compared, the striking fact was the fairly close relationship between the two variables. This information is presented in Table VII. To some extent educational level and income level increased together. At the lowest educational level there were very few people in the highest income category, attitudes were least favorable, and

TABLE VI

A COMPARISON OF RESIDENCE, AGE, AND ATTITUDE SCORE

Attitudes
Percentage

Residence	Age	Low	Medium Low	Medium High	High	N	
Town	20-35 years	13.4	23.8	26.0	36.6	357	v = .420
	36-55 years	10.7	24.4	33.1	31.6	196	$x^2 = 74.53$
	56 + years	32.8	30.7	18.3	17.9	289	at 6 df
						824	$p < .001$
Rural	20-35 years	30.3	36.1	18.0	15.4	155	v = .224
	36-55 years	37.7	27.5	21.2	13.3	127	$x^2 = 9.17$
	56 + years	44.0	30.9	9.5	15.4	84	at 6 df
						366	$p < .20$
						1208	

$x^2 = 139.741$ at 15 df $p < .001$

TABLE VII

A COMPARISON OF EDUCATION, INCOME, AND ATTITUDE SCORES

Attitudes
Percentage

Education	Income	Low	Medium Low	Medium High	High	N	
0 - 8	$0-5,000	44.5	35.0	11.4	8.9	157	$x^2 = 6.301$
	$5,001-10,000	31.4	40.4	12.3	15.7	89	at 6 df
	$10,001-15,000	38.4	30.7	19.2	11.5	26	$p < .50$
	$15,001 +	30.0	50.0	0.0	20.0	10	v = .258
						282	
9 - 12	$0-5,000	31.6	34.7	18.0	15.5	161	$x^2 = 37.82$
	$5,001-10,000	17.1	24.4	29.9	28.4	274	at 9 df
	$10,001-15,000	24.4	20.0	25.4	29.0	110	$p < .001$
	$15,001	35.2	35.2	15.4	14.0	71	v = .428
						616	
13 +	$0-5,000	16.9	30.1	30.1	22.6	53	$x^2 = 16.79$
	$5,001-10,000	9.6	17.5	25.4	47.3	114	at 9 df
	$10,001-15,000	9.7	13.4	30.4	46.3	82	$p < .10$
	$15,001 +	8.6	24.6	34.7	31.8	69	v = .397
						318	
						1216	

$x^2 = 202.199$ at 33 df $p < .001$

there was very little difference in attitude between income levels. Then, as education increased, favorable attitudes increased. However, with income, a slightly different pattern emerged. As education increased, it was the middle two income groups that registered the greatest favorable increases. Perhaps many people in the highest income group own some farm property which would tend to result in a less favorable attitude. Also, the lowest income group undoubtedly contains some retired farmers who also would be inclined to have less favorable attitudes.

The comparison of educational level and age in Table VIII indicates that as age increases there is a decline in favorable attitudes, and that within age categories there is a tendency toward favorable attitudes with increases in educational level. A disproportionate number of people in the oldest age category have had eight years of formal education or less. However, with the increased availability of education, this phenomenon is changing and should gradually result in more favorable attitudes if present trends continue. The least favorable group of all was in the 20 to 35 age category among those people who have had eight years of education or less. However, this group is a much smaller proportion of the population than it was 40 years ago.

TABLE VIII

A COMPARISON OF AGE, EDUCATION, AND ATTITUDE SCORES

		Attitudes Percentage					
Age	Education	Low	Medium Low	Medium High	High	N	
20-35 years	0-8 years	35.2	46.4	9.8	8.4	71	v = .477
	9-12 years	20.0	29.0	23.6	27.2	275	x^2 = 57.98
	13 + years	9.2	17.1	28.2	45.3	163	at 6 df
						509	p < .001
36-55 years	0-8 years	29.8	33.3	19.2	17.5	57	v = .404
	9-12 years	23.8	26.4	30.1	19.5	189	x^2 = 26.56
	13 + years	10.2	17.9	30.7	41.0	78	at 6 df
						324	p < .001
56 +	0-8 years	44.9	33.7	10.1	11.2	178	v = .396
	9-12 years	30.0	28.6	20.9	20.2	143	x^2 = 29.44
	13 + years	16.9	28.3	24.5	30.1	53	at 6 df
						374	p < .001
						1207	

x^2 = 172.984 at 24 df p < .001

Table IX presents a comparison of age and income which again suggests that a considerable number of the oldest age group are in the lowest income group and are undoubtedly retired. The phenomena of the two middle income groups having the most favorable attitudes continued in the two youngest age categories.

TABLE IX

A COMPARISON OF AGE, INCOME, AND ATTITUDE SCORES

		Attitudes Percentage					
Age	Income	Low	Medium Low	Medium High	High	N	
	$0-5,000	29.3	35.7	21.1	13.7	109	$x^2 = 32.20$
20-	$5,001-10,000	14.0	25.9	24.2	35.7	235	at 9 df
35	$10,001-15,000	17.3	18.2	25.0	39.4	104	$p < .001$
yrs.	$15,001 +	28.2	21.7	23.9	26.0	46	$v = .442$
						494	
	$0-5,000	29.4	29.4	32.5	17.7	34	$x^2 = 6.34$
36-	$5,001-10,000	20.0	25.3	29.3	25.3	150	at 9 df
55	$10,001-15,000	18.8	22.3	30.5	28.2	85	$p < .80$
yrs.	$15,001 +	28.8	28.8	23.7	18.6	59	$v = .240$
						328	
	$0-5,000	38.5	34.5	13.9	13.0	223	$x^2 = 64.05$
56 +	$5,001-10,000	27.0	28.2	20.0	24.7	85	at 9 df
yrs.	$10,001-15,000	42.8	10.7	21.4	25.0	28	$p < .001$
	$15,001 +	13.0	39.1	17.3	30.4	23	$v = .731$
						359	
						1181	

$x^2 = 110.108$ at 33 df $p < .001$

It is apparent from this analysis that support for water conservation is greatest among groups which may be least directly affected by such projects. This support is located in the towns, especially with people who have had the most formal education and are under 55 years of age. The least amount of support comes from people who are directly involved in farming, the oldest age group, and the least educated group. It is also quite probable that many retired people spent much of their life farming and share farm attitudes. Although this fixed response questionnaire did not probe directly the reasons for attitudes, it appeared from the pattern of responses and comments by our interviewers that many of the proposals in the questionnaire were seen as affecting the interests of people who farm. Many of the items deal with proper methods of farming, regulation of land use, water use, feed lots, and even taking farm land to build reservoirs for flood control and recreation. These are items which directly affect people who are farming and promise to have a greater impact on their lives than any other people in the basin. Consequently, it is not surprising that this group is more reluctant to support many of the proposals. In fact, as the analysis of issues will show, a majority of rural people did support many proposals, though not as substantially as other groups. This evidence suggests that proposals for watershed development and conservation must be perceived as at least neutral in effect and certainly not harmful to farming interests if such proposals are to be accepted by rural people.

Perhaps the most encouraging evidence is the positive effect of education on attitudes. This is the only factor which pervades the homogeneity of the rural area and has a discernable impact. Age, income, and other variables seem to make little difference in rural attitudes. This suggests that there may be some change in rural attitudes as those who are younger and more educated become a larger proportion of the farming public. Economic interest will certainly remain an exceedingly important factor as suggested by the fact that for comparable educational levels, the rural attitude is less favorable. However, the future rural population will probably be more receptive to new proposals than past generations if the conflict with their economic interest is not too great. In other words, a more educated rural population will probably be a more public regarding population and less inclined to consider only economic self-interest. This is assuming that family farms and rural communities will continue to exist. Should absentee ownership become predominant in the basin, it is more difficult to predict what attitudes and practices would become prevalent.

PART II

ISSUES

There has been some public opinion research on water conservation issues. The previously cited South Dakota study measured public reaction to proposed water development programs including irrigation, municipal water use, domestic use, livestock use, recharge of ground water, raising stream and lake levels, use by industry, stream pollution, recreation, and power. 69.8 percent of the respondents considered the program as good or excellent, and 79.8 percent thought it would help development in the central part of the state. However, when asked if the proposal was practical or useful in relation to cost, only 38.7 percent agreed that it was practical, 34 percent were undecided, and 27.3 percent thought the proposal to be impractical. The survey also showed that 88.5 percent were not informed about the program, even when the project would concern them directly.[1]

A study in Mississippi asked landowners to evaluate watershed projects both before and after completion. Prior to construction, 39.4 percent of the land owners viewed the projects favorably, 25.1 percent were undecided, and 35.3 percent viewed them unfavorably. These figures did not include the 19.2 percent of the land owners who said they were not familiar with the program.[2] A study in the Wakarusa River Valley of Kansas prior to a campaign against a large dam project disclosed that 36 percent of the people living downstream from the proposed dam favored it and 31 percent of those people favored the alternative of watershed treatment. Of the residents living upstream from the proposed dam site, only 15 percent favored the dam and 54 percent favored watershed treatment.[3] A survey in Syracuse, N.Y., found that water pollution had less priority as a problem than education, law enforcement, housing, and employment. Suburban residents, however, rated water pollution as having greater priority than housing and employment, but less priority than education and law enforcement. Residents with lower socio-economic status were less willing to pay for pollution abatement than residents with higher socio-economic status.[4] A survey commissioned by the National Wildlife Federation found that 74 percent of those surveyed were willing to pay some additional taxes to improve the environment.[5]

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[1] Photiadiz, pp. 4, 16.

[2] Peterson and Ross, p. 13

[3] E. Jackson Baur, "Opinion Change in a Public Controversy," Public Opinion Quarterly, Vol. 26, Summer 1962, p. 220.

[4] H. George Frederickson and Howard Magnas, "Comparing Attitudes Toward Water Pollution in Syracuse," Water Resources Research, Vol. 4, No. 5, (October, 1968) pp. 877-890.

[5] Gallup Survey, "What America Really Thinks About Pollution Cleanup", National Wildlife, Vol. 10, April 1972, pp. 18-19.

For purposes of analysis, this study of public attitudes in the Blue River Basin was divided into seven issues. These issues were chlorination, water quality and proper farming methods, pollution abatement and tax support for pollution abatement, recreation, special districts, irrigation, and flood control. These categories included from one to five statements with some statements overlapping into several issue categories. The following pages include an analysis of each of these issues. Most data for the issue analyses were taken from the first survey to avoid any influence which the communication projects may have had. Where data from the second survey is utilized, it is so noted. A complete tabulation of responses by survey area and the residence variable are presented in Appendix III. Only the most salient aspects of an issue are discussed in the text.

CHLORINATION

At the time the Nebraska Soil and Water Conservation Commission completed their study (1968), almost no means for disinfecting public water supplies was utilized in the basin.[6] In the course of our interviews, respondents were asked to react to the following statement: "Cities should use chlorination to disinfect their water supply". A majority in three areas and a plurality in one area agreed with the statement. Table X indicates the results by area and education. The results show that support for chlorination increases as education increases. Differences between educational levels were statistically significant in three of the four survey areas. In the Henderson and Beatrice survey areas, a significant plurality of the age group over 55 opposed chlorination, whereas a majority of the middle and younger age groups supported chlorination.[7] There was a significant difference between income groups in the Beatrice survey as support for chlorination increased with income level. Of course, both age and income are to some extent reflected in education.

While overall attitudes were favorable, it should be noted that these views may not be held with great conviction or interest. A total of 298 respondents or 24.3 percent were undecided. More interesting yet, was the fact that of the 589 respondents who were re-interviewed, 235 or 39.8 percent had changed their position. However, significant net change occurred in only the smallest survey area, Friend, possibly as a result of the information program. While it is possible that the information program affected the 235 respondents who changed, a more plausible explanation for the areas other than Friend seems to be that some respondents were randomly giving responses with little conviction or knowledge. In fact, some respondents confused chlorination with fluoridation, which was also mentioned in one of the information programs. Thus, it appears that the public has a weakly held view which favors chlorination, but which might be easily subject to change.

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[6] Nebraska Soil and Water Conservation Commission. Big Blue River Basin Report, p. 85.

[7] All significant differences in variables not listed in the text are presented in Appendix IV.

TABLE X

CHLORINATION ISSUE BY AREA AND EDUCATION

Percentage

Education	0-8 years	9-12 years	13+ years	Total	
Area 1 - Friend					
*Agree	35.1	53.9	64.1	51.9	
Undecided	44.4	31.7	26.4	33.4	$x^2 = 9.593$
Disagree	20.3	14.2	9.4	14.5	at 4 df
N =	54	126	53	233	$p < .05$
Area 2 - Seward					
*Agree	52.4	52.0	64.5	55.8	
Undecided	21.7	23.9	19.0	21.9	$x^2 = 5.320$
Disagree	25.7	23.9	16.3	22.2	at 4 df
N =	101	167	110	378	$p < .30$
Area 3 - Henderson					
*Agree	40.3	44.8	60.3	47.4	
Undecided	19.3	35.3	27.5	29.2	$x^2 = 17.917$
Disagree	40.3	19.8	12.0	23.3	at 4 df
N =	62	116	58	236	$p < .01$
Area 4 - Gage					
*Agree	33.7	55.2	76.3	54.4	
Undecided	16.8	20.9	11.8	18.1	$x^2 = 39.821$
Disagree	49.4	23.8	11.8	27.4	at 4 df
N =	89	210	76	375	$p < .001$

*denotes response favorable to conservation

WATER QUALITY AND PROPER FARMING METHODS

Since silt is a major cause of pollution in the Big Blue River, proper farming methods have a crucial relationship to water quality. Residents of the basin often indicated strong support for proper farming methods without always perceiving their relationship to water quality. The importance of terracing and contouring was clearly recognized. People were asked to respond to the statement that "Terracing and contouring on hilly land are needless agricultural expenditures." Table XI presents the results.

TABLE XI

TERRACING AND CONTOURING BY AREA

Percentages

	Area 1 Friend	Area 2 Seward	Area3 Henderson	Area 4 Beatrice
Agree	10.0	10.1	9.9	6.0
Undecided	8.7	3.7	5.1	7.4
*Disagree	81.1	86.0	84.8	86.4
N =	228	373	231	361

*denotes response favorable to conservation

Apparently years of effort by agricultural authorities have had a beneficial result. In the Beatrice area, 98.5 percent of the farmers disagreed with the statement compared with 83.6 percent of the people in town, a significant difference. That area has relatively rugged terrain and consequently a greater need for such practices. Reaction to the statement that "Farmers should prevent silt from polluting streams", brought a similar response as indicated in Table XII.

TABLE XII

PREVENTION OF SILTING BY AREA

Percentages

	Area 1 Friend	Area 2 Seward	Area 3 Henderson	Area 4 Beatrice
*Agree	80.2	83.9	86.5	87.5
Undecided	12.2	7.5	8.6	3.3
Disagree	7.4	8.5	4.7	9.1
N =	228	373	231	361

*denotes response favorable to conservation

People were rather decisive in their responses to these two statements as evidenced by the low percentages of undecided responses. There was also a relatively low number of attitude changes by respondents who were re-interviewed, 19.4 percent and 23.7 percent respectively. A few respondents did inquire as to how farmers might prevent silt from polluting streams.

The other three statements on this issue were more controversial, and since erosion of land near streams results in much silt pollution of streams, the question of farming such land was considered. People were requested to respond to the statement that "Hilly land near streams should not be used for crops". Responses were more negative than positive in all four areas as noted in Table XIII.

TABLE XIII

FARMING EROSIVE LAND BY AREA

Percentages

	Area 1 Friend	Area 2 Seward	Area 3 Henderson	Area 4 Beatrice
*Agree	36.8	30.5	31.1	31.0
Undecided	21.9	17.4	18.6	19.6
Disagree	41.2	52.0	50.2	49.3
N =	228	373	231	361

*denotes response favorable to conservation.

In spite of the controversial nature of the statement, there were no significant differences in demographic groups except in Seward County where people in the rural areas and people with a direct interest in farming disagreed with the statement to a greater degree than others. People with higher incomes in Seward County were also significantly less undecided than those with lower incomes. There are more streams in this survey area than the other survey areas so perhaps a greater element of self-interest was present. Our interviewers reported some respondent confusion on this statement in the sense that many people could see no respon why hilly land near streams should not be farmed. There appears to have been little perception of the problems of stream quality that might arise from farming such lands. This confusion was also suggested by evidence from re-interviews which indicated that fully 50 percent of those respondents changed their position without any net change resulting in any of the four survey areas. This may have been the result of much random guessing on this particular statement. However, even with increased awareness of the problem, views of many respondents on this issue might not change very much due to economic interest. Some respondents indicated that they paid taxes on the land and could not afford to leave it idle. Perhaps a program of tax reduction incentives would be needed to reduce the use of this type of land.

Insecticides and herbicides have been utilized by farmers for some years. Their use has been criticized in recent years for various reasons, including runoff into water courses. To test public attitudes on this question, people were requested to respond to the statement that "The use of insecticides and herbicides should not be limited". A majority of respondents in all survey areas disagreed with the statement, but there were significant differences between several demographic groups. Table XIV indicates significant differences by residence in three of four survey areas. The table shows that townspeople were much more willing to have some type of limitation on the use of insecticides and herbicides than rural people. In three of the four areas, the probability that these differences occurred by chance was much in excess of 1/10 of one percent. The variable of direct farming concern likewise was significant in the same three areas following the same pattern. In the Seward and Beatrice surveys, there was also a difference by occupation with farmers showing more reluctance on limitation.

TABLE XIV

LIMITATION OF INSECTICIDES AND HERBICIDES BY RESIDENCE AND AREA

Percentage

	Rural	Town	Total	
Area 1 - Friend				
Agree	28.7	17.2	20.6	
Undecided	7.5	12.9	11.4	$x^2 = 4.462$
*Disagree	63.6	69.7	67.9	at 2 df
N =	66	162	228	$p < .10$
Area 2 - Seward				
Agree	38.8	12.5	19.8	
Undecided	13.5	8.8	10.1	$x^2 = 37.703$
*Disagree	47.5	78.5	69.9	at 2 df
N =	103	270	373	$p < .001$
Area 3 - Henderson				
Agree	37.5	13.3	24.2	
Undecided	17.3	11.8	14.2	$x^2 = 23.079$
*Disagree	45.1	74.8	61.4	at 2 df
N =	104	127	231	$p < .001$
Area 4 - Beatrice				
Agree	31.3	7.4	11.9	
Undecided	13.4	8.1	9.1	$x^2 = 33.602$
*Disagree	55.2	84.3	78.9	at 2 df
N =	67	294	361	$p < .001$

*denotes response favorable to conservation.

Thus the residential, economic, and occupational division on this question seemed rather obvious. In the Seward and Beatrice surveys, support for limitation increased with increases in educational level. Views on this question seemed more definite as evidenced by the relatively low percentages of undecided responses.

The final statement concerning farming methods was an attempt to measure willingness to have certain practices required by law. This involved legal compulsion and was expected to be controversial. People were asked to respond to the statement that "Conservation practices on farm land should be required by law". As expected, there was considerable opposition to this statement in rural areas. Rural-town differences were significant in all four survey areas and are presented in Table XV.

TABLE XV

REQUIRED CONSERVATION PRACTICES BY AREA

Residence	Percentage			
	Rural	Town	Total	
Area 1 - Friend				
*Agree	25.7	47.5	41.2	
Undecided	18.1	21.0	20.1	$x^2 = 12.915$
Disagree	56.0	31.5	38.5	at 2 df
N =	66	162	228	$p < .01$
Area 2 - Seward				
*Agree	36.8	55.5	50.4	
Undecided	8.7	20.0	16.8	$x^2 = 31.163$
Disagree	54.3	24.4	32.7	at 2 df
N =	103	270	373	$p < .001$
Area 3 - Henderson				
*Agree	24.0	51.9	39.3	
Undecided	16.3	21.2	19.0	$x^2 = 26.888$
Disagree	59.6	26.7	41.5	at 2 df
N =	104	127	231	$p < .001$
Area 4 - Beatrice				
*Agree	29.8	54.4	49.8	
Undecided	11.9	12.5	12.4	$x^2 = 15.834$
Disagree	58.2	32.9	37.6	at 2 df
N =	67	294	361	$p < .001$

*denotes response favorable to conservation

Differences by direct farming interest also occurred in all four areas following the same pattern as did differences by occupation in all four areas with farmers opposed to the requirements by law. People who rented property were slightly more favorable toward the legal requirement than property owners in the Seward and Beatrice surveys. In the Beatrice survey, people in the highest education category, 13 or more years, were also more willing to regulate by law. A total of 41.3 percent of those people re-interviewed changed their position between surveys with the only net change occurring in the rural Beatrice area. There was no difference in the changes between the rural and town areas. This seemed to reflect either great indecision on the part of many respondents or a rather low level of interest and understanding. This statement again showed that differences in attitudes were primarily related to interest in farming.

In summary, there was great support for terracing, contouring, and prevention of silt from reaching streams. However, there was considerable opposition to the idea that hilly land near streams should not be farmed. This opposition was very general through almost all demographic groups who seemed to be unaware of the problems associated with such farming practices. People engaged in farming were less willing to limit the use of insecticides and pesticides and were opposed to requiring conservation practices by law on farm land. The rural-town difference appeared very frequently in this study and was not surprising in view of the economic interests involved. It should be noted that the greatest opposition concerned statements which mentioned the use of farm land and implied or required changes in present land use practices. Given the traditions of individualism and dislike of governmental regulation in many rural areas, such a reaction was not surprising. It probably means that progress in the improvement of water quality which happens to be related to farming methods will be a slow and gradual process.

POLLUTION ABATEMENT AND COSTS

In recent years, preserving and improving the environment has become a popular issue with 85 percent of the population expressing concern.[8] To a degree this concern was shared by basin residents as already evidenced by responses to statements concerning use of insecticides and herbicides, and the silting of streams. It was also evident in responses to statements more overtly related to water pollution. Respondents in the basin overwhelmingly agreed with the statement that "All towns and industries should be prohibited from polluting streams." Table XVI presents the results. There was more agreement on this statement than on any other item in the survey. However, the statement appeared to be a low risk item for many respondents, some of whom commented to the effect that "We don't have any of that stuff around here". However, according to a recent study, there was pollution from municipalities and agricultural sources in the basin.[9]

TABLE XVI

PROHIBIT POLLUTION BY TOWNS AND INDUSTRIES

Percentages

	Area 1 Friend	Area 2 Seward	Area 3 Henderson	Area 4 Beatrice
*Agree	92.1	95.4	92.6	95.0
Undecided	4.8	3.2	4.7	2.7
Disagree	3.0	1.3	2.5	2.2
N =	228	373	231	361

*denotes response favorable to conservation.

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[8] Gallup Survey, pp. 18-19.

[9] Big Blue River Basin Report, pp. 58-60, 88-90.

Perhaps more indicative of attitudes concerning pollution was response to the statement that "There has been too much concern over water pollution". This statement divided a number of demographic groups, including the age category which is presented in Table XVII. Approximately 70 percent of all respondents disagreed with the statement, but the figure was about 20 percent lower for the oldest age group, and this difference was significant for all four survey areas. The results seemed to indicate some reluctance to consider the changing needs of society, although even a majority of the oldest group also disagreed with the statement. Since differences were also related to direct farming interest and education, these results may mean that a disproportionate number of older people have engaged in farming and have had fewer years of education.

TABLE XVII

CONCERN OVER WATER POLLUTION BY AGE

Percentage

Age	20-35 years	36-55 years	56+ years	Total	
Area 1 - Friend					
Agree	15.1	16.9	32.5	22.0	
Undecided	5.8	10.1	15.1	10.3	$x^2 = 15.344$
*Disagree	79.0	72.8	52.3	67.5	at 4 df
N =	86	59	86	231	$p < .01$
Area 2 - Seward					
Agree	12.8	13.0	24.1	15.5	
Undecided	6.4	4.7	16.0	8.2	$x^2 = 18.001$
*Disagree	80.7	82.1	59.7	76.2	at 4 df
N =	203	84	87	374	$p < .01$
Area 3 - Henderson					
Agree	11.3	11.2	35.5	19.1	
Undecided	6.8	9.8	13.1	9.7	$x^2 = 23.621$
*Disagree	81.8	78.8	51.3	71.0	at 4 df
N =	88	71	76	235	$p < .001$
Area 4 - Beatrice					
Agree	15.9	10.9	35.2	20.9	
Undecided	3.0	6.3	7.2	5.4	$x^2 = 27.865$
*Disagree	81.0	82.7	57.6	73.5	at 4 df
N =	132	110	125	367	$p < .001$

*denotes response favorable to conservation

As mentioned, respondents also differed on the basis of direct farming interest in three of the four survey areas. Table XVIII presents the results. The table indicates that people with a direct interest in farming were more inclined to believe that there has been too much concern over water pollution. There was also more of a tendency for people with lower levels of education to feel that there has been too much concern. Table XIX presents the results. (Undecided responses were dropped from the Beatrice section of Table XIX because expected frequencies for that row were too low.) When the undecided category was dropped for occupation, there was a significant difference in all four sections with farm and retired groups responding less favorably than other groups. In the Friend and Beatrice surveys, the town group was more favorable than the rural group, and in the Seward area, the lowest income group was less favorable than the other three income groups. The evidence, then, indicated that a disproportionate number of people over 55, people with less education, and people connected with farming, believed that there has been too much concern over water pollution.

TABLE XVIII

CONCERN OVER WATER POLLUTION BY FARMING INTEREST

Percentage

Farming Interest	Direct Interest	No Interest	Total	
Area 1 - Friend				
Agree	31.1	14.1	21.8	
Undecided	13.2	7.8	10.3	$x^2 = 13.421$
*Disagree	55.6	77.9	67.8	at 4 df
N =	106	127	233	$p < .01$
Area 2 - Seward				
Agree	19.2	13.0	15.3	
Undecided	13.5	5.0	8.2	$x^2 = 12.593$
*Disagree	67.1	81.9	76.4	at 4 df
N =	140	238	378	$p < .01$
Area 3 - Henderson				
Agree	19.0	19.1	19.0	
Undecided	11.9	6.3	9.7	$x^2 = 2.049$
*Disagree	69.0	74.4	71.1	at 4 df
N =	142	94	236	$p < .50$
Area 4 - Beatrice				
Agree	32.6	16.2	20.5	
Undecided	8.1	4.3	5.3	$x^2 = 15.482$
*Disagree	59.1	79.4	74.1	at 4 df
N =	98	277	375	$p < .001$

*denotes response favorable to conservation

TABLE XIX

CONCERN OVER WATER POLLUTION BY EDUCATION

Percentage

Education	0-8 years	9-12 years	13 + years	Total	
Area 1 - Friend					
Agree	35.1	19.8	13.2	21.8	
Undecided	12.9	11.9	3.7	10.3	$x^2 = 13.145$
*Disagree	51.8	68.2	83.0	67.8	at 4 df
N =	54	126	53	233	$p < .001$
Area 2 - Seward					
Agree	28.7	12.5	7.2	15.3	
Undecided	18.8	5.3	2.7	8.2	$x^2 = 47.680$
*Disagree	52.4	82.0	90.0	76.4	at 4 df
N =	101	167	110	378	$p < .001$
Area 3 - Henderson					
Agree	32.2	19.8	3.4	19.0	
Undecided	8.0	9.4	12.0	9.7	$x^2 = 16.220$
*Disagree	59.6	70.6	84.4	71.1	at 4 df
N =	62	116	58	236	$p < .01$
Area 4 - Beatrice					
Agree	34.6	20.8	10.5	21.6	$x^2 = 13.31$
*Disagree	65.3	79.1	89.4	78.3	at 2 df
N =	78	201	76	355	$p < .01$

*denotes attitude favorable to conservation

Given the agricultural nature of the basin, feedlots are a rather common source of pollution to streams. To measure willingness to regulate this source of pollution, respondents were asked to react to the statement that "All feedlot operators should be prohibited from polluting streams." As expected, there was some difference of regional and economic interests. In all four survey areas, rural residents were less willing to prohibit feedlot pollution than town residents. However, even a majority of rural residents in three areas and a plurality in another area agreed with the statement. Table XX presents the results. Two-thirds of the rural residents in the Beatrice sample were feeding livestock, and they reacted more unfavorably to the idea of prohibition than rural residents of the other three areas. However, our survey samples found almost as large a proportion of feedlots in the Seward County survey area. Those who had direct farming interest were significantly less willing to prohibit feedlot pollution than those with no direct farming interest in all areas except Friend. In the Seward and

Beatrice areas, farmers and retired people were less willing to prevent feedlot pollution than other groups. Among farmers, there was virtually no difference in attitude between livestock feeders and non-livestock feeders except in the Seward survey where non-feeders were more willing to prohibit feedlot pollution. Finally, those people with a higher level of education were more willing to prohibit feedlot pollution than people with a lower level of education in all areas except Henderson.

TABLE XX

PROHIBIT FEEDLOT POLLUTION BY RESIDENCE

	Percentage			
	Rural	Town	Total	
Area 1 - Friend				
*Agree	72.7	87.6	83.3	
Undecided	12.1	3.0	5.7	$x^2 = 9.452$
Disagree	15.1	9.2	10.9	at 2 df
N =	66	162	228	$p < .01$
Area 2 - Seward				
*Agree	68.9	86.6	81.7	
Undecided	9.7	5.5	6.7	$x^2 = 16.716$
Disagree	21.3	7.7	11.5	at 2 df
N =	103	270	373	$p < .001$
Area 3 - Henderson				
*Agree	68.2	85.0	77.4	
Undecided	9.6	7.8	8.6	$x^2 = 11.597$
Disagree	22.1	7.0	13.8	at 2 df
N =	101	127	231	$p < .01$
Area 4 - Beatrice				
*Agree	49.2	[illegible].0	80.0	
Undecided	10.4	[illegible].4	5.5	$x^2 = 51.620$
Disagree	40.2	8.5	14.4	at 2 df
N =	67	294	361	$p < .001$

*denotes response favorable to conservation

After answering the statement about feedlot pollution, respondents were read an alternate statement which noted that "Only the large feedlot operators should be prohibited from polluting streams". This second statement was clearly more palatable to people living in the rural areas. Perhaps many rural residents believed that they would not qualify as a large feedlot operator and consequently would not be subject to regulation. Table XXI presents the results. There was also a significant difference between occupation groups in all four areas with farmers agreeing to the statement more than other groups. In the Henderson and Beatrice areas, people with direct farming interest had a much greater tendency to favor limiting feedlot regulation to the large operators. There was no difference between feeders and non-feeders except in the Henderson area where feeders were in greater agreement with the statement. In all survey areas except Henderson, there was a significant willingness to limit only large feedlots as the level of education declined.

TABLE XXI

TO PROHIBIT ONLY LARGE FEEDLOT POLLUTION BY RESIDENCE

	Percentage			
Residence	Rural	Town	Total	
Area 1 - Friend				
Agree	45.4	19.1	26.7	
Undecided	9.0	4.9	6.1	$x^2 = 19.946$
*Disagree	45.4	75.9	67.1	at 2 df
N =	66	162	228	$p < .001$
Area 2 - Seward				
Agree	38.8	24.8	28.6	
Undecided	7.7	4.8	5.6	$x^2 = 9.532$
*Disagree	53.3	70.3	65.6	at 2 df
N =	103	270	373	$p < .01$
Area 3 - Henderson				
Agree	54.8	14.9	32.9	
Undecided	6.7	7.0	6.9	$x^2 = 42.423$
*Disagree	38.4	77.9	60.1	at 2 df
N =	104	127	231	$p < .001$
Area 4 - Beatrice				
Agree	53.7	17.6	24.3	
Undecided	4.4	4.7	4.7	$x^2 = 38.930$
*Disagree	41.7	77.5	70.9	at 2 df
N =	67	294	361	$p < .001$

*denotes response favorable to conservation

If improvement in surface water quality is to be accomplished, it may depend in part on the willingness of the general public to support, or at least not oppose pollution abatement measures. The cost of such activity may well be higher taxes, higher consumer prices or both. In fact, a measure of the public's commitment to pollution abatement may be their willingness to pay the price. A previously cited survey indicated that 74 percent of the public was willing to pay some additional taxes to improve the environment.[9] In the Blue River Basin survey, respondents were asked to react to the statement that "I would rather have low taxes and low consumer prices than clean rivers". Since Nebraskan's antipathy for taxes is well-known, this investigator was surprised by the results which indicated that a majority in each survey area showed support for clean rivers by disagreeing with the statement, although support was not as high as in the national survey just cited. This statement also elicited more differences by demographic variables than any other statement. Level of education showed significant differences in all four areas with support for clean rivers increasing by educational level. Table XXII notes the results. People living in town were significantly more willing to support clean rivers than rural people in three of the four survey areas, as indicated in Table XXIII. In the Friend and Seward areas, people without direct farming interest were more willing to support clean rivers than people with a direct farming interest.

TABLE XXII

LOW TAXES AND PRICES VS. CLEAN RIVERS BY EDUCATION

Percentage

Education	0-8 years	9-12 years	13 + years	Total	
Area 1 - Friend					
Agree	38.8	19.8	5.6	21.0	
Undecided	20.3	28.5	11.3	22.7	x^2 = 28.835
*Disagree	40.7	51.5	83.0	56.2	at 4 df
N =	54	126	53	233	$p < .001$
Area 2 - Seward					
Agree	26.7	14.9	8.1	16.1	
Undecided	30.6	19.1	13.6	20.6	x^2 = 30.108
*Disagree	42.5	65.8	78.1	63.2	at 4 df
N =	101	167	110	378	$p < .001$
Area 3 - Henderson					
Agree	40.3	22.4	6.8	23.3	
Undecided	19.3	21.5	17.2	19.9	x^2 = 21.506
*Disagree	40.3	56.0	75.8	56.7	at 4 df
N =	62	116	58	236	$p < .001$
Area 4 - Beatrice					
Agree	29.2	15.7	13.1	18.4	
Undecided	20.2	14.7	17.1	16.5	x^2 = 12.535
*Disagree	50.5	69.5	69.7	65.0	at 4 df
N =	89	210	76	375	$p < .02$

*denotes response favorable to conservation

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[9] Gallup Survey, pp. 18-19.

TABLE XXIII

LOW TAXES AND PRICES VS. CLEAN RIVERS BY RESIDENCE

Percentage

Residence	Rural	Town	Total	
Area 1 - Friend				
Agree	24.2	20.3	21.4	
Undecided	33.3	18.5	22.8	$x^2 = 7.779$
*Disagree	42.4	61.1	55.7	at 2 df
N =	66	162	228	$p < .05$
Area 2 - Seward				
Agree	25.2	12.9	16.3	
Undecided	27.1	17.7	20.3	$x^2 = 15.654$
*Disagree	47.5	69.2	63.2	at 2 df
N =	103	270	373	$p < .001$
Area 3 - Henderson				
Agree	25.9	22.0	23.8	
Undecided	25.9	14.9	19.9	$x^2 = 6.103$
*Disagree	48.0	62.9	56.2	at 2 df
N =	104	127	231	$p < .05$
Area 4 - Beatrice				
Agree	23.8	16.3	17.7	
Undecided	19.4	16.6	17.1	$x^2 = 2.881$
*Disagree	56.7	67.0	65.0	at 2 df
N =	67	294	361	$p < .30$

*denotes attitude favorable to conservation

Age and income also showed significant differences in three of four areas. The oldest age group was least willing to make economic sacrifices for clean rivers, possibly because many are retired, have lower incomes, and believe that they cannot afford such sacrifices. Similarly, it was the lowest income group that was least willing to make economic sacrifices to assure clean rivers. Tables XXIV and XXV present the analysis by age and income. In three of four areas, farmers and retired people had a greater tendency to agree with the statement.

Reluctance, then, to bear the cost of having clean rivers is associated with lower education, rural residence, farming, lower income, older age, and retired status. Several of these categories overlap and obviously include many of the same people. Perhaps the nature of the problem would require farmers to bear a large portion of the cost burden by changes in their methods of operation, and retired people usually have a rather limited income. Still, a majority in every area supported clean rivers, and often a majority or at least a plurality of the least favorable groups supported clean rivers. Certainly these are encouraging results for those who wish to enhance the quality of the environment. In the judgement of this investigator, however, such figures do not indicate a major commitment to clean rivers. Our interviewers repeatedly reported the reluctance which many people evidenced as they disagreed with the statement. Some ambivalence was also indicated by the fact that 39.0 percent of those respondents who were re-interviewed changed their position between surveys, with net change occurring only in the rural Seward area. Many of our interviewers received the impression that respondents did not believe that the cost in terms of prices and taxes would be very high. A definite preference for cleaner rivers was indicated, probably, if the cost of achieving that goal is not very great.

TABLE XXIV

LOW PRICES AND TAXES VS. CLEAN RIVERS BY AGE

Percentages

Age	20-35 years	36-55 years	56 + years	Total	
Area 1 - Friend					
Agree	9.3	11.8	38.3	20.7	
Undecided	23.2	30.5	17.4	22.9	$x^2 = 27.285$
*Disagree	67.4	57.6	44.1	56.2	at 4 df
N =	86	59	86	231	$p < .001$
Area 2 - Seward					
Agree	12.8	16.6	22.9	16.0	
Undecided	19.2	17.8	26.4	20.5	$x^2 = 8.884$
*Disagree	67.9	65.4	50.5	63.3	at 4 df
N =	203	84	87	374	$p < .10$
Area 3 - Henderson					
Agree	18.1	14.0	36.8	22.9	
Undecided	22.7	21.1	15.7	20.0	$x^2 = 12.787$
*Disagree	59.0	64.7	47.3	57.0	at 4 df
N =	88	71	76	235	$p < .02$
Area 4 - Beatrice					
Agree	12.8	15.4	27.2	18.5	
Undecided	15.1	16.3	19.2	16.8	$x^2 = 12.227$
*Disagree	71.9	68.1	53.6	64.5	at 4 df
N =	132	110	125	367	$p < .02$

*denotes attitude favorable to conservation

TABLE XXV

LOW PRICES AND TAXES VS. CLEAN RIVERS BY INCOME

Percentage

Income	$0 - 5,000	$5,001 10,000	$10,001 15,000	$15,001	Total	
Area 1 - Friend						
Agree	31.5	15.7	10.3	12.5	21.3	
Undecided	16.8	33.7	10.3	18.7	22.7	$x^2 = 20.517$
*Disagree	51.5	50.5	79.3	68.7	55.8	at 6 df
N =	95	89	29	16	229	$p < .01$
Area 2 - Seward						
Agree	27.4	13.9	12.8	6.6	16.9	
Undecided	22.5	17.8	18.5	13.3	18.9	$x^2 = 16.255$
*Disagree	50.0	68.2	68.5	80.0	64.0	at 6 df
N =	102	151	70	30	353	$p < .02$
Area 3 - Henderson						
Agree	35.0	24.7	17.3	14.7	24.4	
Undecided	20.0	15.2	23.9	14.7	18.2	$x^2 = 9.298$
*Disagree	45.0	60.0	58.6	70.5	57.3	at 6 df
N =	60	85	46	34	225	$p < .20$
Area 4 - Beatrice						
Agree	29.4	17.1	9.5	0.0	18.3	
Undecided	18.7	12.5	19.1	18.1	16.1	$x^2 = 21.958$
*Disagree	51.7	70.3	71.2	81.8	64.4	at 6 df
N =	112	152	73	22	359	$p < .01$

*denotes response favorable to conservation

In summary, it is evident that prevention of stream pollution is currently a popular idea. This is particularly true where economic risk is low, or when it is perceived that there is no pollution in the local area. Pollution that is directly linked to agriculture is a more sensitive matter and predictably receives more opposition from people connected with agriculture. It raises the question of the cost and effects of such measures on local farming operations. Many farmers in Nebraska have been particularly displeased with the burden of local property taxes on their farming operations and seem very sensitive to that type of cost. For many retired people or those with low incomes, any increased cost may be perceived as too much. Still it is encouraging to note that at least a plurality of these groups also expresses a preference for clean rivers.

RECREATION

The study of the Big Blue River Basin noted that there was no suitable supply of water for boating, water skiing, and swimming and estimated that 6,300 surface acres of water would be needed by 1980. The study also found only 17 acres devoted to camping and picnicking with an estimated 1980 need of 514 acres.[10] Thus, it would appear that the water recreation needs of the basin are indeed great. To probe attitudes on this subject, respondents were asked to respond to the statement that "We need more lakes and parks for recreation". The public was generally divided with only two areas showing an absolute majority in favor of more lakes and parks. The factor which most divided people was direct farming interest, and that is presented in Table XXVI. This table indicates that people with no direct interest in farming were more likely to favor having more lakes and parks than people with direct farming interest in three of four areas. In the Henderson and Beatrice areas, people living in town supported more lakes and parks while people in the rural areas opposed them. Retired people and farmers were less favorable in the Beatrice survey. This statement was much more of an issue in the Beatrice area where four variables showed significant differences. People who own property, have an eighth grade education or less, earn less than $5,000 and are over 55 years old were much less favorably inclined toward more lakes and parks than other groups in the Beatrice area.

Some states have developed recreation in conjunction with small watershed projects. To measure this idea, people were read the statement that "Parks should not be included in small watershed projects". For many farmers, this evidently raised the problem of taking away more farm land. Rural people in three of the four areas disliked the idea of parks in small watershed projects. Table XXVII presents the results. Seward County appeared to be an exception to the rural trend, although results in the second survey had more of a tendency to conform to the expected pattern on this statement in rural Seward County. In the Henderson and Beatrice surveys, farmers and those people with a direct interest in farming were much more opposed to the idea of parks in small watershed projects than other groups. People in the lowest income group were less favorable to the idea than other income groups in the Friend and Seward areas. People over 55 years of age were opposed to the idea in the Seward and Beatrice surveys. Finally, individuals with 13 or more years of formal education, viewed parks in watershed projects much more favorably than other groups in the Seward area. The fact that 53.5 percent of re-interviewed respondents changed their position on this statement with the only net change occuring in the rural Seward area, suggests that people were not very familiar with the idea and probably do not hold very decided views on the subject.

Factors related to farming such as rural residence, direct farming interest, or farming as an occupation, divided the population on this issue more than other variables. Perhaps this is not surprising because the issue again concerns the use of rural farm land. Our interviewers reported that some farmers objected to the loss of good farm land to water projects and others disliked the idea of a great influx of people into their area for

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[10] Big Blue River Basin Report, p. 62.

recreational purposes. Perhaps more important was the general lack of firm support for more water-based recreation in all segments of the population. Small majorities or pluralities can hardly be considered strong support. Several reasons for this lack of support seem plausible, but would be best explored with an open-ended questionnaire. Some people responded that we had enough parks already. Perhaps living in a rather sparsely populated part of the country has reduced the need of its residents for parks and open spaces. Others may feel that the benefits are not worth the expenditure. Possibly, the work ethic is still very strong in this part of the United States and reflects a negative attitude toward recreation. Finally, there was considerable opposition to large reservoirs in several areas of the basin, a situation which may have had some effect on responses to this issue.

TABLE XXVI

MORE LAKES AND PARKS BY DIRECT FARMING INTEREST

Percentages

Farming Interest	Direct Interest	No Interest	Total	
Area 1 - Friend				
*Agree	50.0	52.7	51.5	
Undecided	12.2	15.7	14.1	$x^2 = 1.235$
Disagree	37.7	31.4	34.3	at 2 df
N =	106	127	233	$p < .70$
Area 2 - Seward				
*Agree	43.5	49.1	47.0	
Undecided	10.0	18.0	15.0	$x^2 = 8.733$
Disagree	46.4	32.7	37.8	at 2 df
N =	140	238	378	$p < .02$
Area 3 - Henderson				
*Agree	33.0	58.5	43.2	
Undecided	17.6	15.9	16.9	$x^2 = 16.560$
Disagree	49.2	25.5	39.8	at 2 df
N =	142	94	236	$p < .001$
Area 4 - Beatrice				
*Agree	41.8	64.2	58.4	
Undecided	11.2	12.6	12.2	$x^2 = 20.368$
Disagree	46.9	23.1	29.3	at 2 df
N =	98	277	375	$p < .001$

*denotes response favorable to conservation

TABLE XXVII

KEEP PARKS OUT OF SMALL WATERSHED PROJECTS BY RESIDENCE

Percentage

Residence	Rural	Town	Total	
Area 1 - Friend				
Agree	33.3	29.6	32.4	
Undecided	27.2	28.3	28.0	x^2 = 2.285
*Disagree	33.3	41.9	39.4	at 2 df
N =	66	162	228	$p < .50$
Area 2 - Seward				
Agree	33.9	28.1	29.7	
Undecided	13.5	27.7	23.8	x^2 = 28.261
*Disagree	52.4	44.0	46.3	at 2 df
N =	103	270	373	$p < .02$
Area 3 - Henderson				
Agree	56.7	22.8	38.0	
Undecided	23.0	37.7	31.1	x^2 = 28.060
*Disagree	20.1	39.3	30.7	at 2 df
N =	104	127	231	$p < .001$
Area 4 - Beatrice				
Agree	53.7	32.3	36.2	
Undecided	13.4	20.7	19.3	x^2 = 10.852
*Disagree	32.8	46.9	44.3	at 2 df
N =	67	294	361	$p < .01$

*denotes response favorable to conservation

SPECIAL DISTRICTS

During the 1972 session, the Nebraska Legislature completed final action on a bill creating Natural Resource Districts which would ultimately supercede and encompass existing Soil and Water Conservation Districts. The existing districts were usually organized on a county basis whereas the new districts were designed to include all or a substantial portion of a watershed area on the assumption that such a jurisdiction would facilitate watershed development and conservation by coinciding with natural boundaries and problem areas. To test public opinion on this issue, respondents were asked: "Have you heard anything about the newly proposed Natural Resource Districts?" Table XXVIII indicates that a large majority of the public had never heard of the Natural Resource Districts. Respondents who replied affirmatively were then asked to react to the statement that "The newly proposed Natural Resource Districts would be better than the present Soil and Water Conservation Districts". Of those respondents who had previously answered "yes", many were undecided as shown in Table XXIX. Since very few people were familiar with the proposed districts, the issue was also phrased conceptually by asking respondents to react to the statement that "Organizations for conserving soil and water should be smaller than a whole watershed area." The results were not very meaningful in the towns because about half the respondents were undecided. In the rural areas, people were more familiar with these concepts and generally preferred the smaller districts except in the Beatrice area where farmers have had much experience with small watershed projects. Statistical significance by residence is really due to the much greater number of undecided responses in the town areas. Table XXX presents the results by residence.

TABLE XXVIII

KNOWLEDGE OF NATURAL RESOURCE DISTRICTS

	Rural %	Town %	Total	
Area 1 - Friend				
Yes	17.1	21.6	20.2	$x^2 = .610$
No	82.8	78.3	79.7	at 1 df
N	70	157	227	$p < .50$
Area 2 - Seward				
Yes	23.4	13.5	16.4	$x^2 = 5.574$
No	76.5	86.4	83.5	at 1 df
N	111	266	377	$p < .02$
Area 3 - Henderson				
Yes	19.6	8.8	14.0	$x^2 = 5.900$
No	80.3	91.2	85.9	at 1 df
N	117	125	242	$p < .02$
Area 4 - Beatrice				
Yes	15.4	11.0	12.0	$x^2 = .120$
No	84.5	88.9	87.9	at 1 df
N	84	281	365	$p < .80$

Analysis by direct farming interest and occupation showed very similar results as people connected with farming indicated a preference for smaller districts except in the Beatrice survey and were less undecided. In the Seward and Henderson surveys, people in the upper income groups were less undecided and had a greater tendency to favor small districts. However, in the Beatrice area, the top three income groups favored the larger districts. In the Friend area, there was a tendency to favor larger districts and be less undecided as educational level increased. In the Seward area, people over age 35 favored the smaller districts. People under age 35 were more evenly divided and more undecided.

TABLE XXIX

COMPARISON OF NATURAL RESOURCE DISTRICTS WITH PRESENT DISTRICTS

	Rural %	Town %	Total
Area 1 - Friend			
Agree	25.0	29.4	28.2
Undecided	41.6	61.7	56.5
Disagree	33.3	8.8	15.2
N =	12	34	46
Area 2 - Seward			
Agree	38.4	41.6	40.3
Undecided	23.0	30.5	27.4
Disagree	38.4	27.7	32.2
N =	26	36	62
Area 3 - Henderson			
Agree	43.4	45.4	44.1
Undecided	30.4	45.4	35.2
Disagree	26.0	9.0	20.5
N =	23	11	34
Area 4 - Beatrice			
Agree	46.1	25.8	31.8
Undecided	23.0	54.8	45.4
Disagree	30.7	19.3	22.7
N =	13	31	44

Attitudes concerning this issue seem quite fluid as indicated by the large number of undecided responses and by the fact that 49.7 percent of those respondents who were re-interviewed changed their position between surveys while a net change occurred only in the rural Henderson Area. Essentially, the new law creating the Natural Resources Districts was successfully enacted through the active support of an interested and informed elite. It certainly did not arise as a demand from public opinion, and few people at the time of the survey seemed aware of its existence. However, as the districts become an established part of the institutional structure of water conservation, public awareness and acceptance will probably increase. The new districts do not appear to impinge greatly on any economic interests and thus should arouse minimal opposition.

IRRIGATION

Irrigation has brought the benefits of stable crop production and greater yields to the farmers of the Big Blue River Basin. However, this irrigation has resulted in severe water table declines in the western part of the basin. The declines raise the possibility of much greater pumping expense. Should irrigation become impossible, lower yields, great production variability, and loss of investment in irrigation equipment would occur. Given the dismal economic implications of a future water shortage, residents of the basin were presented with a series of statements concerning the problem.

TABLE XXX

LARGE VS. SMALL CONSERVATION DISTRICTS BY RESIDENCE

Percentages

Residence	Rural	Town	Total	
Area 1 - Friend				
Agree	46.9	26.5	32.4	
Undecided	31.8	53.0	46.9	$x^2 = 10.564$
*Disagree	21.2	20.3	20.6	at 2 df
N =	66	162	228	$p < .01$
Area 2 - Seward				
Agree	51.4	30.3	36.1	
Undecided	26.2	48.1	42.0	$x^2 = 17.706$
*Disagree	22.3	21.4	21.7	at 2 df
N =	103	270	373	$p < .001$
Area 3 - Henderson				
Agree	43.2	23.6	32.4	
Undecided	26.9	64.5	47.6	$x^2 = 33.111$
*Disagree	29.8	11.8	19.9	at 2 df
N =	104	127	231	$p < .001$
Area 4 - Beatrice				
Agree	34.3	26.1	27.7	
Undecided	23.8	49.3	44.5	$x^2 = 15.118$
*Disagree	41.7	24.4	27.7	at 2 df
N =	67	294	361	$p < .001$

*denotes response favorable to conservation

One statement, which proved not be very controversial, noted that "There should be no regulation on the amount of irrigation water pumped from streams". In all of the areas except Henderson, over 80 percent of the respondents disagreed with the statement. Perhaps few people were affected economically since our samples showed a very small number of surface-water irrigators. A few respondents did complain that some irrigators had ruined their fishing by using too much river water. Table XXXI presents the results.

TABLE XXXI

PUMPING AN UNLIMITED AMOUNT OF WATER FROM STREAMS

Percentages

	Area 1 Friend	Area 2 Seward	Area 3 Henderson	Area 4 Beatrice
Agree	10.0	11.5	18.1	8.3
Undecided	6.5	4.8	13.8	7.4
*Disagree	83.3	83.6	67.9	84.2
N =	228	373	231	361

*denotes response favorable to conservation

More controversial were statements dealing with ground water irrigation. One method of conserving irrigation water would be to contain excess runoff at the end of a field and recycle it. To test this idea, respondents were requested to react to the statement that "Reuse of irrigation water should be required by law". The addition of legal sanction to the statement undoubtedly increased rural opposition because of possible increased costs and regulation of a farming method. However, in all four areas, a majority of the rural people supported the idea. Table XXXII presents the results. Much of the statistical significance in the table stems from the fact that the rural people were much less undecided than the townspeople. It probably indicates that rural people are rather knowledgeable about this problem. In the Henderson area, farmers and others with direct interest in farming were less favorable to the idea than other groups. There was no significant difference between farmers with irrigation and farmers without irrigation except in the Henderson area. And, although the significance test was valid, the number of non-irrigator farmers in the Henderson area was so small as to render any trend questionable.

Respondents were also read the statement that "Irrigators should be able to use an unlimited amount of ground water". A majority disagreed with the statement in all survey areas, however, the Henderson area, which has had the greatest water table decline, had the smallest majority that disagreed with the statement. The percentage of people who disagreed with the statement increased as level of education increased. In the Seward and Beatrice areas, the difference was significant as indicated in Table XXXIII. A comparison of V scores suggests that the Friend area result would also have been significant with a larger sample size. In the Seward and Beatrice areas, people over 55 years of age had a greater tendency to agree with the statement. In the Beatrice survey, people who were retired and people in the lowest income category also had a greater tendency to agree with the statement. When non-irrigators and irrigators were compared, the irrigators had a greater tendency to agree with the statement in the Friend area. Table XXXIV presents those results.

TABLE XXXII

REQUIRE REUSE OF IRRIGATION WATER

Percentages

Residence	Rural	Town	Total	
Area 1 - Friend				
*Agree	77.2	62.3	66.6	
Undecided	12.1	19.1	17.1	$x^2 = 4.725$
Disagree	10.6	18.5	16.2	at 2 df
N =	66	162	228	$p < .10$
Area 2 - Seward				
*Agree	71.8	66.6	68.0	
Undecided	9.7	21.1	17.9	$x^2 = 7.762$
Disagree	18.4	12.2	13.9	at 2 df
N =	103	270	373	$p < .05$
Area 3 - Henderson				
*Agree	51.9	62.9	58.0	
Undecided	9.6	17.3	13.8	$x^2 = 10.823$
Disagree	38.4	19.6	28.1	at 2 df
N =	104	127	231	$p < .01$
Area 4 - Beatrice				
*Agree	65.6	64.9	65.0	
Undecided	7.4	20.4	18.0	$x^2 = 9.920$
Disagree	26.8	14.6	16.8	at 2 df
N =	67	294	361	$p < .02$

*denotes favorable response

During the second survey, respondents were again asked to respond to the statement about unlimited water use and to a new item which stated that "Irrigation wells in this county should be metered by local conservation districts". This latter statement was designed to test willingness to enact regulations to alleviate the declining water table. Conservationists consider metering to be a relatively drastic remedy. When responses to the two statements were compared, it was clear that 18 to 25 percent of the people who disagreed with unlimited use were unwilling to meter irrigation water. Perhaps they object to any governmental regulation or believe that the situation does not yet warrant regulation. Thus, there appears to be a gap between perception of wasteful water use and a willingness to prevent that waste by regulation. The responses to both statements are presented in Table XXXV. Residents of the Henderson area were decidedly less favorable to metering water than residents of other areas. In all areas except Henderson, a plurality of rural residents actually favored metering irrigation water when respondents were compared by residence. Table XXXVI presents the results. Town residents were more undecided than rural residents who had a greater tendency to disagree with the statement, and a plurality of rural residents disagreed with the statement in the Henderson area. The Friend area difference is almost significant, and the V scores suggest it would be significant with a slightly larger sample.

TABLE XXXIII

USE UNLIMITED AMOUNT OF IRRIGATION WATER BY EDUCATION

Percentages

	0-8 Years	9-12 Years	13 + Years	Total	
Area 1 - Friend					
Agree	31.4	30.1	15.0	27.0	$x^2 = 6.996$
Undecided	12.9	11.1	7.5	10.7	at 4 df
*Disagree	55.5	58.7	77.3	62.2	$p < .20$
N =	54	126	53	233	$v = .245$
Area 2 - Seward					
Agree	43.5	25.1	13.6	26.7	$x^2 = 28.935$
Undecided	4.9	12.5	7.2	8.9	at 4 df
*Disagree	51.4	62.2	79.0	64.2	$p < .001$
N =	101	167	110	378	$v = .277$
Area 3 - Henderson					
Agree	43.5	38.7	24.1	36.4	$x^2 = 5.597$
Undecided	6.4	6.8	10.3	7.6	at 4 df
*Disagree	50.0	54.3	65.5	55.9	$p < .30$
N =	62	116	58	236	$v = .154$
Area 4 - Beatrice					
Agree	38.2	23.3	9.2	24.0	$x^2 = 20.664$
Undecided	11.2	8.5	13.1	10.1	at 4 df
*Disagree	50.5	68.0	77.6	65.8	$p < .001$
N =	89	210	76	375	$v = .235$

*denotes favorable response

Responses to the statements on irrigation reflect some concern about the problem and some willingness to take action. The reaction of rural residents to several of the statements was especially interesting. A majority of rural residents in all four areas favored requiring the reuse of irrigation water, and a small majority of rural residents disagreed with the statement that irrigators should be able to use an unlimited amount of ground water (see Appendix III). Finally, a plurality of rural residents agreed with the statement on metering water in all areas except Henderson which has suffered the greatest decline. There is considerable irrigation in the Friend and Seward areas where a plurality of rural residents agreed with the statement.

TABLE XXXIV

USE UNLIMITED AMOUNT OF GROUNDWATER

Percentages

Farmers	Irrigators	Non-Irrigators	Total	
Friend Area				
Agree	39.2	12.2	26.0	$x^2 = 9.752$
Undecided	9.8	10.2	10.0	at 2 df
*Disagree	50.9	77.5	64.0	p .01
N =	51	49	100	

*denotes favorable response

TABLE XXXV

UNLIMITED WATER USE AND METERING WATER BY AREA

Percentages

	Area 1 Friend	Area 2 Seward	Area 3 Henderson	Area 4 Beatrice
UNLIMITED WATER USE				
Agree	22.6	18.0	36.2	19.7
Undecided	5.9	7.0	7.1	11.8
*Disagree	71.3	74.8	56.5	68.3
N =	234	382	251	395
METERING WATER				
*Agree	49.1	49.7	35.6	51.5
Undecided	20.9	38.7	25.2	26.6
Disagree	29.9	21.4	39.2	21.8
N =	234	382	250	394

*denotes favorable response

A water shortage for irrigation purposes would directly damage local farming operations and would probably have an adverse effect on the economy of many small towns. Many farmers seem to realize the gravity of the situation and the need for methods to conserve and regulate the use of water.

Legal compulsion arouses the most opposition among farmers, probably due to the potential for interference and control of farming operations. Nevertheless, most farmers seem to realize the necessity of solving the problem. Perhaps methods of local management and control would be most acceptable to rural residents. While the survey results show considerable opposition to regulation, the results also indicate that an even greater number of rural residents seem willing to have some action taken to solve the problem.

TABLE XXXVI

METERING WATER BY RESIDENCE

Percentages

Residence	Rural	Town	Total	
Area 1 - Friend				
*Agree	47.5	50.0	49.1	$x^2 = 6.238$
Undecided	13.7	24.6	20.9	at 2 df
Disagree	38.7	25.3	29.9	$p < .05$
N =	80	154	234	$v = .163$
Area 2 - Seward				
*Agree	42.5	53.0	49.7	$x^2 = 8.394$
Undecided	27.5	29.3	28.7	at 2 df
Disagree	30.0	17.5	21.4	$p < .02$
N =	120	262	382	$v = .150$
Area 3 - Henderson				
*Agree	34.4	36.7	35.6	$x^2 = 7.338$
Undecided	18.8	31.2	25.2	at 2 df
Disagree	46.7	32.0	39.2	$p < .05$
N =	122	128	250	$v = .171$
Area 4 - Beatrice				
*Agree	47.2	52.8	51.5	$x^2 = 5.720$
Undecided	21.9	28.0	26.6	at 2 df
Disagree	30.7	19.1	21.8	$p < .10$
N =	91	303	394	$v = .120$

*denotes favorable response

FLOOD CONTROL

Residents who live near the Big Blue River and its tributaries have been menaced by flood threats on an average of every two years, and damage has been regularly inflicted upon both farm and town property. During the survey people were given a series of statements concerning flood control. One item that basically concerned the towns stated that "The city council should prohibit people from building on flood plains". There were very few differences between demographic groups on this statement, and a majority favored the idea in all areas. Table XXXVII presents the results. There is again the possibility that many people were not familiar with the idea since 41.2 percent of the respondents interviewed changed their mind between surveys with a net change occuring only in the rural Friend area.

TABLE XXXVII

PROHIBIT PEOPLE FROM BUILDING ON FLOOD PLAINS BY AREA

Percentages

	Area 1 Friend	Area 2 Seward	Area 3 Henderson	Area 4 Beatrice
*Agree	66.0	59.7	61.8	64.0
Undecided	17.5	20.3	19.0	15.7
Disagree	16.3	19.8	19.0	20.2
N =	233	378	236	375

Small watershed projects have been utilized to impede erosion and flooding, particularly in the southern part of the basin. To test reaction to small watershed projects people were read the statement that "Small watershed projects are not a necessary expenditure". A majority of respondents in all areas disagreed with the statement. There were some differences in demographic categories. In three of the four areas, the lowest income group was significantly less favorable to small watershed projects. It appears that people in the lowest income bracket were less knowledgeable about such projects as evidenced by the higher percentage of undecided responses in three areas. Table XXXVIII presents the results. In the Friend and Seward areas, people over 55 years of age and people with the least education were much less favorable to small watershed projects than other groups. Retired people were the least favorably inclined group in the Seward and Beatrice areas, and farmers were among the most favorably inclined groups in those two areas. As noted earlier, there is considerable overlap between the low income, retired, and over 55 groups. In the Seward area, people with a direct interest in farming were more favorable than people with no direct interest in farming. The concept of small watershed projects seems to be rather popular, especially in rural areas, and actually gained support between surveys as will be noted in the final section of this report.

Dutch Elm disease, flooding, and siltation have hampered the capacity of many streams in the basin to carry runoff from heavy rains. For this reason, people were asked to respond to the statement that "The clearing of river channels is a waste of time and money". This statement produced some differences between farming and non-farming interests with the latter being more favorably inclined to clear river channels. Table IXL presents an analysis by residence. Only the Henderson area failed to show a significant difference. In the same three areas, people with direct farming interest were less favorably inclined than people with no direct farming interest, and retired people and farmers were less favorably inclined than other occupation groups. Perhaps rural people believe that they may have to pay a disproportionate share of the cost since river channels traverse predominately rural land. However, a majority of rural residents in three areas did disagree with the statement. In the Friend and Seward areas, people over 55 years of age and people with an eighth grade education or less, were not as favorably inclined to clear river channels as younger age groups and more educated groups. People with incomes of less than $5,000 were less inclined to support clearing of river channels than the other three income groups in the Seward area. People who rent property were more inclined to support channel clearing than people who owned property in the Friend area. In summary, despite some differences within demographic groups, a majority of those interviewed supported the idea in all areas.

TABLE XXXVIII

SMALL WATERSHED PROJECTS UNNECESSARY BY INCOME

Percentages

Income (Dollars)	0-5,000	5,001-10,000	10,001-15,000	15,000+	Total	
Area 1 - Friend						
Agree	32.6	14.6	10.3	18.7	21.8	$x^2 = 18.796$
Undecided	21.0	29.2	20.6	0.0	22.7	at 6 df
*Disagree	46.3	56.1	68.9	81.2	55.4	$p < .01$
N =	95	89	29	16	229	
Area 2 - Seward						
Agree	26.4	7.9	14.2	20.0	15.5	$x^2 = 35.416$
Undecided	30.3	17.2	12.8	6.6	19.2	at 6 df
*Disagree	43.1	74.8	72.8	73.3	65.1	$p < .001$
N =	102	151	70	30	353	
Area 3 - Henderson						
Agree	23.3	17.6	17.3	14.7	18.6	$x^2 = 10.979$
Undecided	30.0	20.0	10.8	11.7	19.5	at 6 df
*Disagree	46.6	62.3	71.7	73.5	61.7	$p < .10$
N =	60	85	46	34	255	
Area 4 - Beatrice						
Agree	28.5	11.8	12.3	13.6	17.2	$x^2 = 29.468$
Undecided	27.6	15.1	16.4	9.0	18.9	at 6 df
*Disagree	43.7	73.0	71.2	77.2	63.7	$p < .001$
N =	112	152	73	22	359	

*denotes favorable response

TABLE IXL

CLEARING OF RIVER CHANNELS BY RESIDENCE

Percentages

Residence	Rural	Town	Total	
Area 1 - Friend				
Agree	31.8	18.5	22.3	$x^2 = 8.795$
Undecided	25.7	17.9	20.1	at 2 df
*Disagree	42.4	63.5	57.4	$p < .02$
N =	66	162	228	
Area 2 - Seward				
Agree	27.1	12.5	16.6	$x^2 = 13.623$
Undecided	7.7	15.9	13.6	at 2 df
*Disagree	65.0	71.4	69.7	$p < .01$
N =	103	270	373	
Area 3 - Henderson				
Agree	25.9	19.6	22.5	$x^2 = 1.603$
Undecided	18.2	22.8	20.7	at 2 df
*Disagree	55.7	57.4	56.7	$p < .30$
N =	104	127	231	
Area 4 - Beatrice				
Agree	29.8	13.6	16.6	$x^2 = 10.391$
Undecided	13.4	16.6	16.0	at 2 df
*Disagree	56.7	69.7	67.3	$p < .01$
N =	67	294	361	

*Denotes favorable response

The question of large reservoirs also had a tendency to divide farming and non-farming interests. Large reservoirs have been an accepted method for impounding water to prevent flood damage farther downstream. However, people engaged in farming were consistently less favorable to large reservoirs than other groups. Many rural people told our interviewers that such projects would waste good farm land and remove more prople from farming. The same people often expressed a preference for small dams. During the first survey respondents were asked to react to the statement that "Large reservoirs should be constructed to protect against flood damage". In three of four areas, people with direct interest in farming were significantly less favorable to the idea than people with no direct interest in farming. Table XL presents the analysis by farming interest. Townspeople were significantly more favorable to large reservoirs than rural people in the Seward and Beatrice areas. People with more than an eighth grade education were much more favorable to large reservoirs than people with less education in the Beatrice area.

TABLE XL

CONSTRUCTION OF LARGE RESERVOIRS BY FARMING INTEREST

Percentages

Farming Interest	Direct Interest	No Interest	Total	
Area 1 - Friend				
*Agree	61.3	72.4	67.3	$x^2 = 3.637$
Undecided	16.0	13.3	14.5	at 2 df
Disagree	22.6	14.1	18.0	$p < .20$
N =	106	127	233	
Area 2 - Seward				
*Agree	59.2	72.6	67.7	$x^2 = 25.495$
Undecided	13.5	19.3	17.1	at 2 df
Disagree	27.1	7.9	15.0	$p < .001$
N =	140	238	378	
Area 3 - Henderson				
*Agree	60.5	79.7	68.2	$x^2 = 10.058$
Undecided	21.1	12.7	17.7	at 2 df
Disagree	18.3	7.4	13.9	$p < .01$
N =	142	94	236	
Area 4 - Beatrice				
*Agree	65.3	80.8	76.8	$x^2 = 12.238$
Undecided	15.3	11.9	12.8	at 2 df
Disagree	19.3	7.2	10.4	$p < .01$
N =	98	277	375	

*denotes favorable response

When people were queried about the advisability of having a large dam and reservoir in their area, support for the large reservoirs dropped dramatically. Since reservoir sites have been proposed in the Friend and Seward areas, it was possible to make such a comparison. During the second survey, people were again read the statement about large reservoirs. They were also read a statement concerning the specific reservoirs proposed for the Big Blue River Basin. Table XLI presents an analysis of responses by residence to both the general and specific statements for each survey area.

It seems evident from the analysis that large flood control dams are not a popular concept in the Big Blue River Basin. Only the Beatrice area responded with a favorable majority, and that was a rather slim majority of 51.7 percent. Another 31.2 percent of the Beatrice area residents were

TABLE XLI

LARGE RESERVOIRS BY RESIDENCE

Percentages

Area 1 - Friend (Large Reservoirs - General Statement)

Residence	Rural	Town	Total	
*Agree	62.5	75.6	71.1	$x^2 = 5.355$
Undecided	15.0	12.5	13.3	at 2 df
Disagree	22.5	11.8	15.5	$p < .10$
N =	80	152	232	

(Large Flood Control Dam on Turkey Creek)

Residence	Rural	Town	Total	
*Agree	35.0	25.9	29.0	$x^2 = 6.473$
Undecided	18.7	34.4	29.0	at 2 df
Disagree	46.2	39.6	41.8	$p < .05$
N =	80	154	234	

Area 2 - Seward (Large Reservoirs - General Statement)

Residence	Rural	Town	Total	
*Agree	53.7	69.9	64.9	$x^2 = 24.354$
Undecided	10.0	15.9	14.1	at 2 df
Disagree	36.1	14.0	20.9	$p < .001$
N =	119	263	382	

(Large Flood Control Dam on Lincoln Creek West of Seward)

Residence	Rural	Town	Total	
*Agree	20.1	35.4	30.7	$x^2 = 12.340$
Undecided	43.6	42.3	42.7	at 2 df
Disagree	36.1	22.1	26.5	$p < .01$
N =	119	262	381	

(Large Flood Control Dam Near Beaver Crossing)

Residence	Rural	Town	Total	
*Agree	16.8	34.3	28.8	$x^2 = 33.119$
Undecided	32.7	43.8	40.4	at 2 df
Disagree	50.4	21.7	30.7	$p < .001$
N =	119	262	381	

Area 3 - Henderson (Large Reservoirs - General Statement)

Residence	Rural	Town	Total	
*Agree	71.4	74.4	72.9	$x^2 = 3.219$
Undecided	10.9	15.2	13.1	at 2 df
Disagree	17.6	10.4	13.9	$p < .30$
N =	119	125	244	

TABLE XLI (Continued)

Residence	Rural	Town	Total	
Area 3 - Henderson (Large Flood Control Dams on the Upper Big Blue River)				
*Agree	37.7	45.7	41.8	$x^2 = 5.865$
Undecided	35.2	39.5	37.4	at 2 df
Disagree	27.0	14.7	20.7	$p < .10$
N =	122	129	251	
Area 4 - Beatrice (Large Reservoirs - General Statement)				
*Agree	64.8	76.8	74.1	$x^2 = 23.017$
Undecided	8.7	15.1	13.7	at 2 df
Disagree	26.3	7.9	12.1	$p < .001$
N =	91	303	394	
(Large Flood Control Dams on the Upper Big Blue River)				
*Agree	45.0	53.7	51.7	$x^2 = 11.228$
Undecided	26.3	32.6	31.2	at 2 df
Disagree	28.5	13.5	17.0	$p < .01$
N =	91	303	394	

*denotes favorable response.

undecided, and this is the downstream area that would stand to benefit from flood protection which the dams would offer. In the survey areas near the proposed reservoir sites, opposition increased. Both rural residents and townspeople were opposed to the Turkey Creek dam in the Friend area. Rural and town residents were somewhat divided in the Seward area with over 40 percent of the town residents undecided on two of the three statements. There was some organized opposition to the Beaver Crossing Dam which might be reflected in the greater rural opposition to that proposal. There was also a great drop in support from the general to the specific statement in the Henderson area, although more people favored the idea than opposed it. The Henderson area is well upstream from the proposed sites.

Flood control did not seem to be a major concern of most respondents. There was support for flood plain control and channel clearing, however, that support seemed to lack commitment. 38 to 41 percent of the re-interviewed respondents changed their position on these statements which probably reflects some lack of familiarity with the proposals. Large reservoirs were distinctly unpopular as specific proposals, and there was a dramatic decline in support for the specific large dams in both rural and town areas. Evidently much more progress would be possible through the use of small watershed projects. These are very popular in the rural areas which should guarantee that opposition to further development would be minimal. Many farmers commented that such projects conserved their soil and usually did not take much land out of production. Government financial aid for these projects has probably enhanced their popularity.

This concludes the discussion of public attitudes toward specific issues. The following section contains an analysis of attitude change.

PART III

ATTITUDE CHANGE

Social science literature is replete with studies of attitude change. Many of these studies were conducted under conditions that allowed for restriction of extraneous influences and use of control groups. This study involved field work under conditions that did not allow for control of extraneous influences. Comment on literature in part three will be restricted to those studies most related to this investigation.

Attempts to measure attitude change must contend with the possibility that the initial test or survey situation sensitizes test subjects and consequently hinders efforts to measure change. Research on this subject has reaped a myriad of conflicting results. For example, Nosanchuk and Marchak using a semantic differential found that subjects were sensitized by the questions rather than preliminary exposure to information. They concluded that as a result of the theory of cognitive dissonance subjects strived for consistency in answers between the first and second tests.[1] A study by Lazarsfeld used four groups of 600 respondents which were divided between a panel group which was interviewed six times and three control groups which were interviewed only twice. He found that differences between the panel and control groups were negligible except for a greater tendency among panel members to answer "don't know".[2]

Previous studies indicate that a variety of factors engender attitude change or apparent attitude change. Some respondents apparently have changed their answer from a "no opinion" response to an alternative response because of the humiliating experience of the first interview. There has also been a tendency for people who have no views to answer interview statements randomly.[3] A study of news commentator effect found that mass communication strikingly increased audience knowledge of the content area covered. Opinion did change in the direction of the commentator's statements although not as rapidly as the growth of knowledge content.[4] One study concluded that educational efforts had a moderating effect on broad policy questions by moving opinions from extremes toward the center of a continuium. The educational methods consisted of meetings and workshops conducted for people attending a labor convention. The change was in the intensity of the view, not in basic orientation.[5]

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[1] T.A. Nosanchuk and M.P. Marchak, "Pretest Sensitization and Attitude Change." Public Opinion Quarterly, Vol. XXXIII, No. 1, Spring 1969, pp. 107-111.

[2] Lazarsfeld, Paul F., "Repeated Interviews as a Tool for Studying Changes in Opinion and their Causes", American Statistical Association Bulletin, 1941, 2:3-7.

[3] Leo P. Crespi, "Interview Effect in Polling", Public Opinion Quarterly, Vol. 12 (Spring, 1948), pp. 100, 108.

[4] Howard E. Freeman, H. Ashley Weeks, and Walter J. Wertheimer, "News Commentator Effect: A Study in Knowledge and Opinion Change", Public Opinion Quarterly, Vol. 19, (Summer 1955), p. 215.

[5] William T. Bell, "An Example of Changing Views of a Control Group" Public Opinion Quarterly, Vol. 19 (Spring 1955) p. 95.

Another study utilizing a chi-square test found that anticipated debate determined the preference of the initially uncommitted, but strengthened and polarized the initially committed regardless of the quality of the two presentations.[6] The experiment was conducted with college psychology students as subjects and actual debate was not utilized. A study by Tannebaum reached a similar conclusion that susceptibility to change was inversely proportional to intensity of the initial attitude.[7] Another study concluded that new opinion and new behavior must be accompanied by supportive environmental change if the new opinion is to achieve stability and permanence.[8]

Several studies have been concerned with attitude change on water resources issues. One study using a panel measured attitude change in a controversy over a proposal for a large dam on the Wakarusa River in Kansas. Surveys were taken about one year apart, and during the interval between surveys the Wakarusa Watershed Association was formed and waged a vigorous campaign against the large dam and in favor of watershed treatment through better land management and a series of smaller dams. The second survey found a net gain of 8 percent in support of watershed treatment from 45 percent to 53 percent, a 6 percent decline in support for the large dam, from 23 percent to 17 percent, and a 2 percent decline in those who were undecided from 32 percent to 30 percent.[9] Although maximum net change was only 8 percent, a total of 33 percent changed from one category to the other. Baur attributed the change to public meetings and interpersonal communication between residents of the area who discussed the issue. He also found that the appeal to group values prevailed over the apparent self-interest of downstream residents who exhibited the greatest change in opposition to the large dam.[10] A study in Mississippi compared attitudes preceding and subsequent to watershed development projects over a time span of six years. Experience with watershed development increased favorable evaluations of the project from 39.4 percent to 54.1 percent of those landowners who were aware of the project. On specific items there were nine positive changes, four negative changes, and nine items for which there was little or no change.[11]

The third objective of this research was to test and compare methods of communicating knowledge about water conservation problems. To accomplish this purpose, four test areas were chosen within the basin, and a different method of communication or variation thereof was utilized in each test area.

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[6] David O. Sears, Jonathan L. Freedman, and Edward F. O'Conner, Jr., "Effects of Anticipated Debate and Commitment on the Polarization of Audience opinion", Public Opinion Quarterly, Vol. 28 (Winter 1964) p. 627.

[7] Percy H. Tannenbaun, "Initial Attitude Toward Source and Concept as Factors in Attitude Change Through Communication", Public Opinion Quarterly, Vol. 20 (Summer 1956), p. 414.

[8] Leon Festinger, "Behavioral Support for Opinion Change", Public Opinion Quarterly, Vol. 28, (Fall 1964) p. 416.

[9] Baur, p. 214

[10] Ibid., pp. 214, 221, 224-225.

[11] John H. Peterson, Jr., and Peggy J. Ross, pp. 13-20.

The Friend vicinity (Area 1) was saturated on a residence basis with a popularized and abridged version of the Big Blue River Basin Report prepared by members of the Agricultural Extension Service of the University of Nebraska.[12] Canvassers attempted to contact every residence in the area, briefly explained the report, and asked residents to read it. When residents were not at home, a written explanation was left at the door with the report. This method brought very specific information about the water resources problems of the basin to virtually every residence in the test area.

In the Seward region (Area 2), a series of four public meetings was jointly sponsored by the Seward County Cooperative Extension Service, the Seward County Soil and Water Conservation District, the Seward County Groundwater Conservation District, Vision 17, and Doane College. The meetings were held on different nights in a separate part of the county and focused primarily on the issues of flood control, groundwater irrigation, and water importation. The panel discussion format was utilized with panels composed of resource experts from state and county governmental agencies. Considerable opportunity was provided for questions and discussion from the floor. This method of communication allowed for response to questions by informed resource specialists and leaders. Possible disadvantages of the method included exposure to a small number of people, and attraction of only those people who were already interested in the problem and committed to a particular viewpoint. Approximately 200 people attended the four meetings.

A series of 10 special feature news stories was published in the newspapers in the Henderson and Beatrice regions (Areas 3 and 4). The articles considered many of the issues raised in the Big Blue River Basin Report Summary but were not as detailed in their information and were more varied in the viewpoints which were presented.[13] The Henderson News is a weekly paper covering a rural farming community, and it was hypothesized that coverage in such a paper would be very effective since the Henderson News is the chief source of news reporting for a rather cohesive community. The articles appeared consecutively in 10 weekly installments. The Beatrice Sun is a much larger daily newspaper covering a wider area, and all 10 articles appeared over a period of about two weeks. It was hypothesized that the articles probably would be less visible in the Beatrice Sun since it is a larger paper. Assuming that the articles would be read, this media offered the possibility of reaching a rather large audience with relative ease.

In the Friend area, the educational program followed the initial survey by about three weeks. Over two months elapsed between the educational program and the final survey. The educational programs followed the initial survey by three months in the other three test areas. The final surveys commenced about one month after the educational programs in these three areas were completed.

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[12] Dean D. Axthelm, Harold H. Gilman, Richard A. Wiese, David R. Miller, Howard L. Wiegers, and Jay P. Holman, The Big Blue River Basin (Report Summary), Lincoln, Nebr., University of Nebraska Agricultural Extension Service.

[13] See Appendix V for the text of the articles.

The second surveys utilized the same sample sizes as the first surveys in all four areas. However, in each area 50 percent of the potential respondents were drawn from people previously interviewed, and the other 50 percent were new potential respondents. This plan was used to provide a panel to analyze gross change and actual attitude movement among individuals. Selecting a completely new set of potential respondents would have allowed only the measurement of net change. Division of potential second survey respondents also facilitated an investigation of possible sensitizing effects from the first interview through a comparison of the responses of old and new respondents to the statements which appeared in both surveys. Out of 160 possible comparisons, there were only four cases (2½ percent) where there was a statistically significant difference between the responses of old and new respondents.[14] Consequently, it was concluded that the sensitization effect was minimal.

NET ATTITUDE CHANGE

An assessment of the effects of the educational programs was accomplished by the measurement of net attitude change. Samples from the four survey areas were divided into rural and town segments since these two variables often disclosed the greatest attitude differences. Had the two variables been combined for this measurement, a slight variation in the size of each subgroup from the first to second survey might have influenced the net change totals and resulted in spurious conclusions. Likewise, for this measurement, the strongly agree - agree and strongly disagree - disagree categories were combined to reduce the possibility of change induced by different interviewers. Thus, net change from the first to the second survey was measured separately for rural and town respondents in each survey area on only three basic attitude positions - agree, undecided, and disagree. The chi-square test of significance was applied to the net change totals with the 5 percent level used as the criteria for significant change. These results for each statement in each area are presented in Appendix VI. The number of positive and negative significant net changes for the rural and town groups in each survey area were then totaled and are presented in Table XLII.

TABLE XLII

QUANTITY AND DIRECTION OF SIGNIFICANT CHANGE

	Friend	Seward	Henderson	Beatrice	Rural-Town Totals
Rural	1+ 3-	3+ 3-	1+ 1-	2+ 1-	7+ 8-
Town	6+ 0-	3+ 0-	0+ 0-	1+ 0-	10+ 0-
+ - Totals	7+ 3-	6+ 3-	1+ 1-	3+ 1-	17+ 8-
Combined Totals	10	9	2	4	25

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[14] To reduce the probability of sensitization, respondents were not informed that there might be a second interview.

While Table XLII indicates basic trends, exclusive use of the chi-square test introduces certain difficulties for a close analysis of the comparative effectiveness of the media tested. The statistical significance of chi-square is directly related to sample size. When the proportions in table cells remain the same and the sample size is doubled, the value of chi-square also doubles. This bias in favor of larger samples affects our comparative analysis of media impact because subsample sizes vary from 150 in rural Friend to 598 in urban Beatrice. Consequently, the possibility of finding statistical significance in urban Beatrice is four times greater than finding it in rural Friend. This bias can be corrected by application of Cramer's V to make all the values comparable.[15] The V^2 formula was applied to the largest sample with the minimum chi-square score for 5 percent significance and yielded a V^2 value of .0107. Using .0107 as a benchmark, all V^2 values greater than .0107 for samples smaller than 598 were considered as evidence of significant attitude change. Using the V^2 values a more sensitive comparison of net change between rural and town areas emerges. The results are presented in Table XLIII.

TABLE XLIII

QUANTITY AND DIRECTION OF SIGNIFICANT CHANGE USING V^2 SCORES

	Friend	Seward	Henderson	Beatrice	Rural-Town Totals
Rural	3+ 6-	6+ 6-	5+ 4-	3+ 5-	17+ 21-
Town	10+ 1-	3+ 1-	3+ 0-	1+ 0-	17+ 2-
+ - Totals	13+ 7-	9+ 7-	8+ 4-	4+ 5-	34+ 23-
Combined Totals	20	16	12	9	57

Analysis of Table XLIII suggests a number of conclusions. Using V^2 values as evidence of attitude change, there were 57 changes out of a possible number of 160 or 35.6 percent. Such change of attitude or opinion was more prevalent in the rural areas where there were 38 instances of change out of a possible 80 or 47.5 percent. In the towns there were only 19 examples of change or 23.7 percent of the total possible. Thus, it would appear that the educational programs had a greater impact in the rural areas. This was probably due to a greater interest of rural residents in the subjects discussed in the educational programs and the surveys. Most of the issues discussed concerned agriculture directly, and most remedial actions would have the greatest effect on agricultural operations. This becomes more apparent when the direction of change is considered. Rural respondents were much more divided with 17 positive changes and 21 negative changes toward water resources issues. Considerations of cost, farming practices, and governmental control probably had some influence on negative change where the issues were clearly perceived. The analysis of issues did indicate that rural respondents had a tendency to view many of the proposals less favorably than town residents. Town residents exhibited much less attitude change, but most of the change was positive in direction with 17 positive changes and 2 negative changes. These town results can probably be attributed to a lower interest in the issues and less risk in terms of cost and interference from implementation of the implied policy iniatives contained in the questionnaire. That there was a total of nine more positive than negative attitude changes is attributable to the positive changes among town respondents.

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[15] Formula $V^2 = \frac{x^2}{n} \times \begin{matrix} r-1 \\ \text{or} \\ c-1 \end{matrix}$ (min.) Min. refers to either r-1 or c-1 whichever is smaller.

Few patterns emerged from changes on specific issues. Small watershed projects were predictably popular with four positive and no negative changes. Finally, there were no positive and three negative changes against the concept of management organizations for a whole watershed area.

Some differences in the effectiveness of the various educational media were apparent. However, the conclusions must be accepted with some caution. Many of the statistically significant changes involved a movement of only 8 or 9 percentage points, the time span for change was a relatively brief three to four months, some change might have been attributable to the different problems and characteristics of the areas surveyed, there was no way to control extraneous sources of influence although no such influences were discovered, and, finally, some net change may have been the result of random guessing by respondents.

With these caveats in mind, several conclusions seem possible. First of all, the impact of the newspapers was somewhat less than the other methods that were utilized, even though the press potentially offered the greatest exposure to the widest audience over a longer period of time. The articles were prominently placed as special features in both newspapers. Apparently, either the articles did not fare well in competition with other items for the readers attention or, if read, did not have as much influence as the other media that were utilized. It is obvious that there are numerous items in the newspapers so that a reader's attention may be very brief and divided among the many articles, or possibly the reader is rather selective and virtually ignores some articles. It is also likely that certain items such as ads and sporting news are more popular than regular news items. Perhaps placing the information in ads would have been more effective. Also, the views expressed in the news stories were less explicit and direct than the information presented in the pamphlets and public meetings. Although we had anticipated a greater impact in the weekly Henderson News, the difference between its influence and that of the daily Beatrice Sun was very slight. To conclude that the newspapers had less influence than the other media used in the experiment is not to say that the newspapers had no effect. There were 21 changes out of a possible 80 or 26.2 percent of the statements. Continued coverage of water resources problems by newspapers over a long period of time would probably increase public knowledge and awareness of those problems. When an issue becomes very controversial and prominent as a result of action, a newspaper's impact in conveying this knowledge would undoubtedly be very great and is obviously indispensable. However, in this study of attitude change over a short time period on issues evoking only a moderate amount of interest, the impact of the newspapers was less than that of the other methods tested.

In Seward County, four public meetings were held which featured a panel of experts in the water resources field and the opportunity for questions and discussion. The meetings were advertised in the press and were held on separate evenings in Milford, Seward, Utica, and Beaver Crossing. Approximately 200 people attended the four meetings and most of those people were from rural areas. In view of the relatively small number of people attending the meetings in relation to the total rural population of the area, it was initially surprising to find more net change in rural Seward County than in any other rural area. Also, the meetings probably attracted people who were already interested in water resources problems. Upon further investigation, however, several factors seem to have enhanced the effectiveness of these public meetings as methods for communicating programatic ideas in the water resources field. As already noted, the issues discussed through the various media were apparently of more interest to rural residents. Rural residents in Seward County had the additional advantage of meeting with experts in the field. Many of the panelists were prominently known for their water resources work in Nebraska, and some have been influential at the policy level. This situation may have increased the level of interest and attendance. From discussion with rural residents, it was apparent that rural people in southeast Nebraska have an informal, but somewhat effective communications network of their own. Many of these people, although isolated on individual farms, visit with their neighbors at church functions, salesbarns, auctions, shopping centers, taverns, and organizational meetings. This proclivity for fraternization is most pronounced during the slack winter months when the four public meetings were held. Consequently, there was ample opportunity for those in attendance at water resources meetings to discuss the issues with their neighbors, thus expanding their influence and the influence of the meetings. That such communications phenomena occur in rural areas was noted in the aforementioned study by Baur.[16] Evidence to the effect that this phenomena did occur in Seward County is admittedly impressionistic and based on a few chance interviews since this problem in interpretation was not anticipated. This meager evidence does offer some explanation for the fact that the public meetings seem to have had greater influence in rural areas than any other method.

The educational program in the Friend area seems to have evoked the most change, in fact more than twice the amount of change in the Beatrice area. In part, the relatively greater influence of this method seems to have been due to the saturation coverage which contacted virtually every residence in the area, many of them in person. The information given to the resident was very factual and specific in its policy recommendations. This afforded residents a clearer idea what might be proposed, and may have prompted an assessment by many individuals of the impact upon them personally. For example, one section of the pamphlet discussed recreational needs and included a map of proposed reservoir sites, one of which was to be located partially within the Friend survey area where it would apparently inundate some land. This issue was also discussed in Seward County where two reservoirs had been proposed. The second survey recorded a 23.7 percent decline in support for lakes and parks in the rural Friend area. A 25.3 percent decline was reported in rural Seward County. (See Appendix VI). Apparently such specific information induced more negative than positive change in rural Friend, and five of the six negative changes in that area concerned items that could have had some effect on rural residents (feedlots, lakes, parks, reuse of irrigation water, and special districts). However, there were two other positive changes in excess of 10 percent in rural Friend which were not valid statistically because of several low cell frequencies. This suggests that the canvass and the public meetings had a similar effect.

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[16] Baur, p. 224.

In the town of Friend, the opposite trend was noted with 10 positive changes and one negative change on 20 statements or 55 percent of the items. Only two of the items affected town residents directly, and the one negative item concerned special districts which was a poorly understood concept, especially in towns and cities. Consequently, the canvass method of presenting specific information was very effective in evoking some positive change of attitude over a short period of time in an area where the economic and regulatory impact of the proposals would be relatively slight.

When the number of attitude changes for the canvass and public meeting methods are combined, the total is 36 changes out of 80 statements or 45 percent of the items. This compares with 21 out of 80 statements or 26.2 percent of the items for the two newspapers. An additional reason for the greater influence of the former two methods may be the factor of personal involvement and contact with other individuals. In the case of the public meetings, the individual has expended some extra effort to attend, and since his interest in the subject is probably greater than average, he perhaps communicates his knowledge and views to other individuals. Thus, he has a more intense experience than the individual who only reads the newspaper. The canvass method is also one of personal experience and personal involvement. The recepient of the information experiences an unexpected intrusion into his realm of thought. Of course, such an intrusion may be offensive and negate any inclination to read the distributed material. However, such encounters can be pleasant, and if so, the information is conveyed in an interesting and personal way, set in bold relief when compared to many sources of information. Certainly the method of delivering and presenting the pamphlet should call attention to it in a way that is not possible with most newspaper articles or television reports. It should also be noted that the canvass was conducted by relatively inexperienced strangers to the community. In a different context, more impressive results might be possible.

Similar results were indicated in an early study of voting behavior which found that personal influence was apparently more important than the news media in determining voting decisions because personal contact had a tendency to reach people not exposed to the media. "On an average day, at least 10 percent more people participated in discussions about the elections - either actively or passively - than listened to a major speech or read about campaign items in a newspaper".[17]

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[17] Paul F. Lazarsfeld et al., The People's Choice, (New York: Columbia University Press, 1948), pp. 150-151.

Obviously several other methods of communication were not tested. Televison offers a pleasing, if somewhat expensive alternative. This method might suffer selection problems at the hands of the potential information recipient similar to that of newspaper items, although it would probably be effective over a long period of time. Use of the mail is another alternative, although this is so widely used that a large portion of mailed items may be quickly spirited into the waste basket.

If this section of the research has any message, it is that personal involvement, experience, and interaction has an impact on the recipients of information. Perhaps this is the reason for the popularity of public meetings in small towns and rural areas. The advantages of having well-informed and interesting presentations for people who have made the effort to attend a meeting seem obvious. These people who are already interested have some potential for affecting the outcome of an issue and the attitudes of their neighbors. The previously cited study[18] noted that such activity was very successful in changing attitudes to oppose the construction of a large reservoir. The advantages of a canvass or some variant of it are less obvious. Such a method can require many canvassers, much time, and considerable expense. However, where a requisite number of volunteers is available, such a method might be feasible. It is certainly possible to envision a scenario where a nucleus of local people, having developed a watershed plan or project that would benefit many people and impinge upon few interests, actively visit most of their neighbors on a residence basis to build support for their project. If the canvassers were local people who were well-informed and respected, the efforts might well be very effective. Successful small watershed development in Gage County, Nebraska some years ago was aided by a series of small neighborhood meetings held in people's homes. Field work with small groups or on a residence basis by extension specialists has advantages similar to those tested here and might be even more effective because of favorable meeting circumstances and the amount of expertise involved.

GROSS ATTITUDE CHANGE

Use of the panel method allowed investigators to explore the dimensions of gross change. Since some people were re-interviews, it was possible to determine the exact movement of attitudes for these people. Tabulations of gross change indicated that an average of 35 percent of the respondents were changing their attitude from one of the three basic positions (agree, undecided, or disagree), although there was a wide difference in gross change between statements. This degree of gross change seemed rather large when compared to the more modest net change percentages. A previously cited study also noted a rather large percentage of gross change.[19] This large gross change suggested several questions for analysis. What types of people were most prone and least prone to change their attitude? Was there any significant difference between demographic groups in the direction of attitude change? To what extent did gross change represent random guessing by respondents who had no firm attitude formulated? The first two questions were relatively easy to analyze, but answers to the last question were much more tentative.

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[18] Baur, p. 224.
[19] Ibid., p. 214.

To explore the relative frequency of gross attitude change, respondents were ranked in the order of the number of attitude changes between surveys, and change was computed conservatively on the basis of three basic categories - agree, undecided, and disagree. Respondents were then divided at the mid-point of these totals into groups representing frequent change and infrequent change. The frequent and infrequent changers were then compared on the basis of key demographic variables. Respondents from all four surveys were combined to insure an adequate number for analysis.

The analysis found a considerable difference between rural and town residents with respect to the frequency of attitude changes. These results are presented in Table XLIV.

TABLE XLIV

RESIDENCE AND FREQUENCY OF ATTITUDE CHANGE

Percentages

Residence	Infrequent Change	Frequent Change	N
Rural	39.8	60.1	178
Town	57.5	42.4	441
			619

$x^2 = 15.245$ at 1 df $p < .001$

Sixty percent of the rural residents were frequent changers as compared to 42.4 percent of the town residents, and this 18 percent difference was very significant statistically. Similar results were found when people were compared by occupation. This comparison is presented in Table XLV. Once again, 61 percent of the farmers were frequent changers followed by 57.9 percent of the retired people, many of whom probably farmed, followed by 44.2 percent of the housewives, some of whom live on farms. The percentages in the labor, business, and professional groups in the high change category were at or below the town average for that category. These results admit of at least several interpretations. Perhaps people who change their opinion frequently are less informed and thus hold their views with less conviction. It is also possible that the issues under investigation were more unsettling and threatening to rural residents. Faced with a set of proposals perceived to be somewhat necessary, but also expensive in terms of money and interference, may have engendered some ambivalence in rural residents. To a degree, both interpretations are probably correct as subsequent evidence will indicate, although an exact delineation of the proportions is difficult.

The relationship between education and frequency of attitude change was very marked. Of people with 15 or more years of school, 70.2 percent changed their attitude less frequently. However, 64 percent of those

TABLE XLV

OCCUPATION AND FREQUENCY OF ATTITUDE CHANGE

Percentages

Occupation	Infrequent Change	Frequent Change	N
Retired	42.0	57.9	107
Farming	38.9	61.0	154
Labor	57.1	42.8	91
Business & Gov't.	74.2	25.7	66
Professional	71.7	28.2	46
Housewife	55.7	44.2	140
			604

$x^2 = 36.704$ at 5 df $p < .001$

respondents with eight or less years of education changed their attitude frequently. These results are presented in Table XLVI. It was rather obvious that as education increased, the frequency of attitude change on these issues decreased. This would seem to warrant the conclusion that people with less education are probably less knowledgeable about these issues, hold their attitudes less firmly, and have a greater tendency to change their attitudes.

TABLE XLVI

EDUCATION AND FREQUENCY OF ATTITUDE CHANGE

Percentages

Years of Education	Infrequent Change	Frequent Change	N
0-8	36.0	64.0	150
9-11	52.6	47.3	76
12	53.4	46.5	232
13-14	62.3	37.6	77
15 +	70.2	29.7	84
			619

$x^2 = 30.047$ at 4 df $p < .001$

There were some significant differences between income groups on the frequency of attitude change. In general, as income increased attitude change decreased although there was virtually no difference between the two high income categories. Table XLVII presents the results. These differences were neither as great nor as significant as the differences in education. There was also some difference by age as presented in Table XLVIII. This table is 0.23 from statistical significance at the 5 percent level, and indicates that the oldest age group has the greatest tendency to change attitudes. As earlier cross tabulations have shown, this group has had

TABLE XLVII

INCOME AND FREQUENCY OF ATTITUDE CHANGE

Percentages

Income	Infrequent Change	Frequent Change	N
$0-5,000	46.2	53.7	175
$5,001-10,000	53.2	46.7	246
$10,001-15,000	62.5	37.5	120
Over $15,000	62.0	38.0	50
			591

$x^2 = 9.012$ at 3 df $p < .05$

TABLE XLVIII

AGE AND FREQUENCY OF ATTITUDE CHANGE

Percentages

Age	Infrequent Change	Frequent Change	N
20 - 35	54.5	45.4	251
36 - 55	57.5	42.5	160
56 +	45.4	54.5	198
			609

$x^2 = 5.976$ at 2 df $p < .10$

fewer years of formal education. It is also probable that many people in the oldest age group were either raised on a farm or have retired from farming. Such factors might increase the tendency to respond in a manner similar to farmers, and, in fact, the evidence indicated a similar response.

Occupation, residence, and education emerged as the leading variables associated with frequency of attitude change. A glance at the occupation table indicates that farming was the occupation most associated with frequent attitude change. A measure of change by residence, would essentially preserve the difference by occupation. Consequently, residence and education were compared to determine further the association of each factor with frequency of attitude change. This cross tabulation is presented in Table IL.

It is apparent that education continues to be a major factor associated with frequency of attitude change in town. As education increased, frequency of attitude change decreased dramatically. While the same trend was noticeable in the rural areas, differences by education were not even near statistical significance. Furthermore, a majority of all three educational groups in the rural area were found in the frequent change category, and this included the most highly educated rural group. The only frequently changing group in town was that with the fewest years of education. As other cross

TABLE IL

A COMPARISON OF RESIDENCE, EDUCATION, AND FREQUENCY OF CHANGING ATTITUDES

Percentages

Residence	Years of Education	Infrequent Change	Frequent Change	N	
	0 - 8	37.2	62.7	102	$x^2 = 26.280$
Town	9 - 12	59.4	40.5	202	at 2 df
	13 +	70.0	29.9	237	$p < .001$
				441	$v = .244$
	0 - 8	33.3	66.6	48	$x^2 = 1.326$
Rural	9 - 12	41.5	58.4	106	at 2 df
	13 +	45.8	54.1	24	$p < .50$
				178	$v = .086$

$x^2 = 42.968$ at 5 df $p < .001$

tabulations have indicated, many people with few years of education were found in the oldest age group which probably has rural origins or rural occupational experience. Consequently, farming appears to have a much greater impact on frequency of attitude change in rural areas than does education. This probably means that the implied economic consequences of the proposed statements were causing considerable concern and ambivalence among rural residents. Education seems to be a much greater factor associated with attitude change in town where direct economic concern with the proposals is relatively small.

The attitude scale was also used to measure the direction of attitude change. By totaling the scores from responses to individual statements, the attitude score for each respondent was determined. The scores on the first and second surveys for each individual were compared. Those respondents whose scores had increased were placed in the category of positive change. Those respondents whose score decreased were categorized under negative change. The analysis indicated that 55 percent of the panel respondents changed their attitude in a positive direction, and 44.9 percent changed their attitude in a negative direction.

Very few demographic differences emerged between those people who changed in a positive direction and those people who changed in a negative direction, and none of the differences were statistically significant at the five percent level. A small majority of both town and rural respondents moved in the direction of positive change. These results are presented in Table L.

Level of education indicated some differences in direction of change. Generally speaking, people with less formal education had a greater tendency toward positive change. While a slight majority of the highly educated

TABLE L

RESIDENCE AND POSITIVE-NEGATIVE ATTITUDE CHANGE

Percentages

Residence	Positive	Negative	N
	Direction of Change		
Town	55.8	44.1	401
Rural	53.0	46.9	164
All Respondents	55.0	44.9	565

$x^2 = 0.266$ at 1 df $p < .70$

tended to negative change, it should be recalled that this group already had much more favorable attitudes toward the issues in question, and was also less likely to change. Table LI presents change by educational category.

TABLE LI

EDUCATION AND POSITIVE-NEGATIVE ATTITUDE CHANGE

Percentages

Years of Education	Positive	Negative	N
	Direction of Change		
0 - 8	58.5	41.4	140
9 - 11	60.5	39.4	71
12	55.4	44.5	202
13 - 14	48.6	51.3	72
15 +	48.7	51.2	80
			565

$x^2 = 4.075$ at 4 df $p < .50$

The most distinct differences occurred between income groups. The middle income groups exhibited a slight tendency toward positive change, 62.8 percent of the lowest income group changed in a positive direction, and 57.4 percent of the highest income group changed in a negative direction. These results are presented in Table LII. The lowest income group included more people who were inclined to change their view and initially held the most negative attitudes. Thus, the possibilities for positive change were relatively great. Perhaps the highest income group perceived some economic disadvantages in the proposals. The highest income group also experienced fewer changes. Income was the only variable which even approached statistical significance.

TABLE LII

INCOME AND POSITIVE-NEGATIVE ATTITUDE CHANGE

Percentages

	Direction of Change		
Income	Positive	Negative	N
$0-5,000	62.8	37.1	164
$5,001-10,000	53.1	46.8	224
$10,001-15,000	53.3	46.6	105
Over $15,000	42.5	57.4	47
N			540

$x^2 = 7.412$ at 3 df $p < .10$

Evidence from this analysis indicates that the key demographic variables were not strongly related to the direction of attitude change. There seemed to be a slight tendency for groups at the extremities of the attitude spectrum to move toward the center or away from their previous position, and more people moved in a positive rather than negative direction. Of course, the people who initially had the least favorable attitudes also had the greatest tendency to change attitude. This fact is probably part of the reason that there were more positive than negative changes. However, a conclusion of slight relationship seems warranted since there was a lack of pronounced patterns and statistical significance.

COMPARISON OF NET AND GROSS CHANGE

The relatively large percentage of gross change for most statements and the relatively small amount of net change seems to suggest that many people do not have firmly held views on the issues under investigation and may even be giving rather casual and random answers to the statements. Such an analysis is further complicated by the fact that one facet of this study involved efforts to affect public attitudes.

In an attempt to assess the meaning of gross change in public opinion, net and gross change were compared on each statement. Responses of panel members from all four survey areas were combined for each statement. Percentages were computed for responses to the first survey, second survey, net change, no change, and gross change. A disadvantage of this procedure was that it tended to minimize extreme responses from any one area. For example, percentage of net change is minimized since the areas sometimes cancel each other. In some areas, there was much greater net change. Such a combination was necessary to insure an adequate number for analysis. The result is a rather interesting comparison between total attitudinal response, no change, and gross change. It indicates that a sizeable number of respondents were changing their position between surveys. This analysis is presented in Table LIII.

TABLE LIII

NET AND GROSS CHANGE FOR REINTERVIEWED RESPONDENTS FOR ALL AREAS COMBINED

Percentages

*indicates favorable response

	1st Survey	2nd Survey	Net Change	No Change	Gross Change
CHLORINATION					
Cities should use chlorination to disinfect their water supply.					
*Agree	52.8	53.8	+ 1.0	38.3	
Undecided	25.1	23.2	- 1.8	10.3	39.8
Disagree	22.0	22.9	+ .8	11.3	
N =	589	589		589	
WATER QUALITY & PROPER FARMING METHODS					
Hilly land near streams should not be used for crops.					
*Agree	32.1	34.8	+ 2.7	16.1	
Undecided	18.7	19.2	+ .5	6.1	50.0
Disagree	49.1	45.8	- 3.3	27.7	
N =	588	588		588	
The use of insecticides and herbicides should not be limited.					
Agree	17.0	14.1	- 2.8	4.7	
Undecided	12.0	10.5	- 1.5	3.0	34.5
*Disagree	70.9	75.3	+ 4.4	57.6	
N =	588	588		588	
Terracing and contouring on hilly land are needless agricultural expenditures.					
Agree	10.2	6.6	- 3.5	1.3	
Undecided	4.7	4.5	- .1	1.1	19.4
*Disagree	85.0	88.7	+ 3.7	78.0	
N =	587	587		587	
Farmers should prevent silt from polluting streams.					
*Agree	86.6	85.1	- 1.5	74.7	
Undecided	7.0	8.2	+ 1.2	.5	23.7
Disagree	6.3	6.6	+ .3	1.0	
N =	585	585		585	

	1st Survey	2nd Survey	Net Change	No Change	Gross Change
Conservation practices on farm land should be required by law.					
*Agree	47.4	47.7	+ .3	32.1	
Undecided	18.0	16.4	- 1.5	5.4	41.3
Disagree	34.5	35.7	+ 1.1	21.0	
N =	588	588		588	
POLLUTION ABATEMENT					
All towns and industries should be prohibited from polluting streams.					
*Agree	95.7	95.9	+ .1	92.5	
Undecided	2.5	2.2	- .3	.5	6.7
Disagree	1.6	1.8	+ .1	.1	
N =	589	589		589	
There has been too much concern over water pollution.					
Agree	17.8	17.1	- .6	7.1	
Undecided	8.1	9.1	+ 1.0	1.7	29.2
*Disagree	73.9	73.6	- .3	61.9	
N =	588	588		588	
All feedlot operators should be prohibited from polluting streams.					
*Agree	81.2	80.7	- .5	70.4	
Undecided	5.7	6.4	+ .6	1.7	23.8
Disagree	12.9	12.7	- .1	4.0	
N =	588	588		588	
TAX SUPPORT FOR POLLUTION ABATEMENT					
I would rather have low taxes and low consumer prices than clean rivers.					
Agree	19.5	15.0	- 4.4	7.0	
Undecided	18.3	18.1	- .1	5.0	39.0
*Disagree	62.1	66.8	+ 4.6	48.8	
N =	579	579		579	
RECREATION					
We need more lakes and parks for recreation.					
*Agree	52.6	47.0	- 5.6	34.9	
Undecided	14.6	13.9	- .6	4.2	38.7
Disagree	32.7	39.0	+ 6.2	22.0	
N =	589	589		589	

Parks should not be included in small watershed projects.

	1st Survey	2nd Survey	Net Change	No Change	Gross Change
Agree	34.6	33.7	- .8	14.5	
Undecided	25.5	24.1	- 1.3	10.8	53.5
*Disagree	39.7	42.0	+ 2.2	21.0	
N =	583	583		583	

SPECIAL DISTRICTS

Organizations for conserving soil and water should be smaller than a whole watershed area.

	1st Survey	2nd Survey	Net Change	No Change	Gross Change
Agree	30.9	39.0	+ 8.0	17.0	
Undecided	44.7	37.1	- 7.5	24.4	49.7
*Disagree	24.2	23.7	- .5	8.7	
N =	581	581		581	

IRRIGATION

There should be no regulation of the amount of irrigation water pumped from streams

	1st Survey	2nd Survey	Net Change	No Change	Gross Change
Agree	11.0	10.0	- 1.0	2.3	
Undecided	6.2	7.1	+ .8	1.0	26.4
*Disagree	82.6	82.8	+ .1	70.1	
N =	589	589		589	

Reuse of irrigation water should be required by law.

	1st Survey	2nd Survey	Net Change	No Change	Gross Change
*Agree	66.2	68.4	+ 2.2	50.9	
Undecided	16.3	14.9	- 1.3	4.5	37.9
Disagree	17.3	16.5	- .8	6.4	
N =	587	587		587	

Irrigators should be able to use an unlimited amount of ground water.

	1st Survey	2nd Survey	Net Change	No Change	Gross Change
Agree	27.8	23.2	- 4.6	11.9	
Undecided	8.6	6.9	- 1.7	1.7	35.3
*Disagree	63.4	69.7	+ 6.2	51.0	
N =	588	588		588	

FLOOD CONTROL

Small watershed projects are not a necessary expenditure.

	1st Survey	2nd Survey	Net Change	No Change	Gross Change
Agree	18.9	15.0	- 3.9	4.4	
Undecided	19.2	16.0	- 3.2	6.6	41.6
*Disagree	61.7	68.9	+ 7.1	47.2	
N =	586	586		586	

	1st Survey	2nd Survey	Net Change	No Change	Gross Change
The city council should prohibit people from building on flood plains.					
*Agree	64.0	65.5	+ 1.5	48.3	
Undecided	16.9	16.1	- .8	4.5	41.2
Disagree	19.0	18.3	- .6	5.7	
N =	589	589		589	
The clearing of river channels is a waste of time and money.					
Agree	19.0	16.1	- 2.9	5.2	
Undecided	15.1	11.7	- 3.4	3.2	37.9
*Disagree	65.7	72.0	+ 6.3	51.2	
N =	587	587		587	
Large reservoirs should be constructed to protect against flood damage.					
*Agree	74.0	75.4	+ 1.3	60.9	
Undecided	14.3	10.0	- 4.2	3.2	30.8
Disagree	11.6	14.5	+ 2.9	4.9	
N =	586	586		586	

It should be noted that the percentage of gross change varied greatly with the issue. For example, only 6.7 percent of the panel changed their view on the statement about towns and industries polluting streams. This suggests a rather firm view about pollution by towns and industries. Only 19.4 percent of the panel changed its view on terracing and contouring, which apparently is a rather popular and well-known idea. However, 49.7 percent of the respondents changed their view on the special district statement, and interviewers in the field noted that respondents were generally not familiar with the concepts. This seems to suggest that many respondents may have been randomly answering that statement with little conviction or knowledge. In fact, the average gross change for the 20 statements was 35 percent.

Perhaps a better indication of firm, committed attitude is the "no change" column. This group would probably be less likely to change their view during a controversy over the issue. Those respondents in the "gross change" column essentially represent a more undecided element. Other tables in the study indicate that this group is disproportionately rural, older, less educated, less affluent, and has less favorable attitudes towards water conservation. As a group they have divided in an obvious way to realize the totals of the first and second survey. In fact, their attitudes became somewhat more favorable on the second survey. However, in the midst of a controversy the gross change group might be less predictable and more likely to change in a particular direction rather than divide as they have in this survey.

A final question to be raised is the possibility that measurement of net change was really a reflection of gross attitude change. Perhaps most of the net changes attributed to the impact of various media were simply a reflection of a large number of people randomly changing their answers on attitude statements. If such a formulation is valid, there should be a close correlation between gross change and net change in the various survey areas. This idea was tested by comparing the percentage of gross change with the chi-square significance of net change on all statements for all areas excluding invalid chi-squares through the Spearman rank order correlation coefficient. The results are presented in Table LIV.

TABLE LIV

SPEARMAN RANK ORDER CORRELATION OF PERCENTAGE OF GROSS CHANGE AND CHI SQUARE SIGNIFICANCE OF NET CHANGE

	Friend	Seward	Henderson	Beatrice
Rural	+.024	+.199	-.045	+.340
Town	-.321	-.366	+.139	-.095

As the analysis indicates the correlations were rather low, five were even negative, and none were statistically significant. The three correlations in the thirties were near statistical significance, but two of those were negative. Only the correlation of +.34 in rural Beatrice suggests the hypothesized relationship, and even that is rather low, explaining only 11.5 percent of the variance. This seems to suggest that gross change and net change were operating somewhat independently. It probably means that a relatively small number of people were reached by the various media and purposefully changed their attitude in a certain direction. A somewhat larger group probably was not influenced and responded somewhat randomly in changing their views with less knowledge and less conviction. Admittedly such evidence is more suggestive than definitive, but it seems to point in the direction of such a conclusion.

CONCLUSIONS

Although mentioned elsewhere in this report, several conclusions warrant summarization and emphasis.

1. A close relationship to farming is less favorably associated with positive attitudes toward water resources use than any other factor. This was a recurrent theme as the variables of occupation, residence, and direct farming interest were tested. Such evidence suggests that the solving of water resources problems in the Big Blue River Basin may result in some increased costs and altered agricultural methods for basin farmers. Understandably, these possible changes that would affect rural life engender some hostility, reluctance, and ambivalence. Education is the other major factor associated with attitude differences. As level of education increases favorable attitudes increase, and this phenomena is particularly apparent outside of the rural areas where farming interest is not as dominant a concern.

2. The most striking aspect of the results of specific issues is the generally positive nature of the attitudes. This was to be expected in the towns where the risk and direct cost of the various proposals would be relatively small. However, positive attitudes were generally the rule in the

rural areas albeit to a lesser extent. This is especially interesting in view of the threatening nature of some of the proposals. Rural opposition was adamant on the subject of requiring conservation practices by law and proposing specific large reservoir sites. However, within these limits, the rural public seems willing to support a considerable number of water resource improvements including possibly, the regulation of groundwater use for irrigation in some areas. Most specific proposals should arouse some opposition because proper water resources use is not a vital concern of everyone. Even where attitudes are basically positive, possible costs, alteration of farming methods, or other priorities may intrude upon the realization of proper water resources use. However, some combination of increased knowledge, incentives, and leadership should enhance the prospects for progress in solving water resources problems within the broad limits set by a generally positive public.

3. The research findings concerning short-term attitude change indicate that informational sources pervaded by personal contact and inducing personal involvement are more closely associated with significant attitude change than more impersonal informational sources such as newspapers. In fact, there were 26.3 percent more instances of change associated with the canvass and public meetings. These results suggest that personalized informational methods may be the most effective means of communicating knowledge about water resources problems at the local community level.

4. Frequency of attitude change exhibited several dimensions. Farmers changed their attitudes more frequently than most other groups. This probably indicates some ambivalence and concern due to possible increased operating costs and changes in farming methods implied in the proposals. Outside of the rural areas, education was closely associated with frequency of attitude change. As level of formal education increased, frequency of attitude change declined. There was no significant difference between demographic groups with respect to the direction of attitude change.

5. The analysis of gross change found that an average of 35 percent of re-interviewed respondents per statement changed their attitude between surveys. This group probably holds its views without much conviction and might change its views with great alacrity in the midst of a public controversy. The percentages appearing in the "no change" column reflect the more stable opinions that would be less likely to change during a controversy.

FUTURE USE OF SURVEYS

A public opinion survey can provide much useful information if there is any doubt as to public attitudes concerning a water resources issue. A survey questionnaire can be relatively brief where information about only one issue is desired. Probably five to six statements or questions would suffice plus some demographic questions. Filter questions could be utilized to assess levels of public interest and knowledge concerning the issue. A brief questionnaire is relatively easy to administer and can sometimes be accomplished by phone, although refusal rates tend to be higher. Since one is going to the trouble to conduct a survey, however, it is tempting to secure as much information as possible by lengthening the questionnaire. A relatively small sample can be used where the amount of tolerated error is not critical and comparison between demographic groups is not essential. For example, with a tolerated error of 8 percent, only 156 respondents are necessary to insure that 95 samples in 100 would not vary more than 8 percent in either direction from the true population estimate. With 9 percent accuracy, a sample size of 124 would suffice. This would allow a relatively quick and inexpensive survey to assess public attitudes. Using stated choice questions or statements allows the use of students or other inexperienced people for interviewers who can usually perform well with minimal training given adequate talent and personality characteristics. Such questionnaires are also easy to tabulate. Open-ended questionnaires are sometimes preferable for probing the reasons for attitudes, but require more talented interviewers and are much more difficult to tabulate and analyze.

It should be a relatively easy matter for groups interested in water resources use to conduct surveys. Some consultation with a social scientist familiar with survey methods would be helpful in drawing the sample and designing the questionnaire. However, the actual administration and tabulation of a small survey should pose few problems. Of course, if the subject is very controversial, the sponsoring organization should take care not to bias the results by using personnel who are obviously and overtly embroiled in the controversy. Sometimes such surveys should be conducted by an impartial or neutral organization. The point is that small public opinion surveys of water resources attitudes can be taken quickly and inexpensively.

APPENDIX I

This appendix includes the attitude statements and demographic questions found on the questionnaire. Statements marked with an asterisk (*) were selected to comprise the attitude scale used for the analysis of demographic variables.

Below you will find opinion statements concerning water use and water quality. Please circle the answer that best describes the respondent's opinion.

Key: SA - Strongly Agree; A - Agree; U - Undecided; D - Disagree; SD - Strongly Disagree

WATER SUPPLIES AND POLLUTION

Cities should use chlorination to disinfect their water supply.

SA	A	U	D	SD
5	4	3	2	1

*Hilly land near streams should not be used for crops.

SA	A	U	D	SD
5	4	3	2	1

*The use of insecticides and herbicides should not be limited.

SA	A	U	D	SD
1	2	3	4	5

*Terracing and contouring on hilly land are needless agricultural expenditures.

SA	A	U	D	SD
1	2	3	4	5

*Farmers should prevent silt from polluting streams.

SA	A	U	D	SD
5	4	3	2	1

*Conservation practices on farm land should be required by law.

SA	A	U	D	SD
5	4	3	2	1

*All towns and industries should be prohibited from polluting streams.

SA	A	U	D	SD
5	4	3	2	1

*There has been too much concern over water pollution.

SA	A	U	D	SD
1	2	3	4	5

*I would rather have low taxes and low consumer prices than clean rivers .

SA	A	U	D	SD
1	2	3	4	5

*All feedlot operators should be prohibited from polluting streams.

SA	A	U	D	SD
5	4	3	2	1

Only large feedlot operators should be prohibited from polluting streams.

SA	A	U	D	SD
1	2	3	4	5

RECREATION

*We need more lakes and parks for recreation.

SA	A	U	D	SD
5	4	3	2	1

Parks should not be included in small watershed projects.

SA	A	U	D	SD
1	2	3	4	5

SPECIAL DISTRICTS

Organizations for conserving soil and water should be smaller than a whole watershed area.

SA	A	U	D	SD
1	2	3	4	5

Have you heard anything about the newly proposed Natural Resource Districts?

Yes No

(If the answer to the above question is yes, read the following statement.) The newly proposed Natural Resource Districts would be better than the present Soil and Water Conservation Districts.

SA	A	U	D	SD
5	4	3	2	1

IRRIGATION

*Irrigators should be able to use an unlimited amount of ground water.

SA	A	U	D	SD
1	2	3	4	5

*Reuse of irrigation water should be required by law.

SA	A	U	D	SD
5	4	3	2	1

*There should be no regulation of the amount of irrigation water pumped from streams.

SA	A	U	D	SD
1	2	3	4	5

Irrigation wells in (this county) should be metered by local conservation districts.

SA	A	U	D	SD
5	4	3	2	1

FLOOD CONTROL

*The clearing of river channels is a waste of time and money.

SA	A	U	D	SD
1	2	3	4	5

The city council should prohibit people from building on flood plains.

SA	A	U	D	SD
5	4	3	2	1

*Small watershed projects are not a necessary expenditure.

SA	A	U	D	SD
1	2	3	4	5

*Large reservoirs should be constructed to protect against flood damage.

SA	A	U	D	SD
5	4	3	2	1

A large flood control dam should be constructed on the Big Blue River at (specific location).

SA	A	U	D	SD
5	4	3	2	1

Please complete the following items:

1. Place of residence: Town____; Rural non-farm____; Rural farm____.

2. How many years have you lived in the community?____________________.

3. What is your marital status?____.

4. How many people, including yourself, live at your address?__________.

5. What is the name of the last school you attended?__________________.
What was the last grade you completed in that school?_______________.

6. Do you own your home (farm), or are you renting it?________________.
If urban resident, do you own any farm land?_________________________.

7. What is your occupation? (Place, job description, owner, or employee), if farmer, do you have a part-time job?__________________________
____.

8. How many acres do you farm or own?_____What crops?__________________.
Do you have any irrigation?____Ground or surface water?_____________.
Do you feed any livestock?____How many head?____Terracing?__________.
Contouring?_____Are you in an organized watershed?_____Do you have any watershed structures?_____Reservoir?_____Other?______________________.

9. Do you belong to any farm, business, union, church, or service organization? List____________________ ____________________________________.

10. Although you are an American Citizen, which nationality do you consider yourself?____.

11. Some people find it difficult to get away from work to vote. Did you happen to vote in the last election for governor?____________________.

12. In politics, do you consider yourself a Democrat or a Republican, or a member of some other party?_______________________________________.

13. Do you happen to have any religious preference?____________________.

14. Please indicate the letter of the group that includes your family's estimated total yearly income. If farming or self-employed use net income. (Do not state a specific income figure.)

A. Under $5,000
B. $5,000 to $10,000
C. $10,001 to $15,000
D. Over $15,000

15. Race: Caucasion____Black____American Indian____Other____________.

16. Sex: Male____ Female____

17. What is your age? ____.

APPENDIX II

All tables in this section compare attitudes with demographic categories by survey area. Attitude scores for each respondent were totaled. Respondents were then ranked from most positive (high) to the least positive (low) concerning water resources use, and then divided into approximately equal categories from high to low. Sometimes the categories were not equal because of tied scores. In such cases, the division was made at the nearest score change. The four attitude groups and various demographic categories were then subjected to a chi-square test to determine if there were any differences within demographic categories across the range of attitude scores, and whether the differences occurred by chance.

The analysis considered direct farming interest, residence, education, occupation, income, age, religion, years in the community, property ownership, sex, nationality, political affiliation, size of family, voting patterns, membership in organizations, size of farmland holdings, irrigation, and livestock feeding. Only tables showing statistically significant differences at the 5 percent level were presented. Percentages on each demographic variable were included to show the direction of the relationships.

FARMING INTEREST*

Percentage

	Low	Medium Low	Medium High	High	N
Area 1 - Friend					
No Interest	18.8	24.4	29.9	26.7	127
Direct Farm Interest	31.1	29.2	16.9	22.6	106
					233

$x^2 = 8.464$ at 3 df $p < .05$

	Low	Medium Low	Medium High	High	N
Area 2 - Seward					
No Interest	15.9	28.5	26.0	29.4	238
Direct Farm Interest	37.1	38.5	16.4	7.8	140
					378

$x^2 = 42.074$ at 3 df $p < .001$

	Low	Medium Low	Medium High	High	N
Area 3 - Henderson					
No Interest	14.8	20.2	21.2	43.6	94
Direct Farm Interest	31.6	30.9	22.5	14.7	142
					236

$x^2 = 26.774$ at 3 df $p < .001$

	Low	Medium Low	Medium High	High	N
Area 4 - Beatrice					
No Interest	19.4	24.5	24.9	31.0	277
Direct Farm Interest	38.7	26.5	17.3	17.3	98
					375

$x^2 = 17.834$ at 3 df $p < .001$

*Direct Farming Interest - those who farm the land they own, those who farm land they rent, and those who live in town and own farm land.
No Interest - All others.

RESIDENCE

Percentage

Area 1 - Friend					
Town	19.7	25.9	27.7	26.5	162
Rural	37.8	30.3	15.1	16.6	66
					228

$x^2 = 11.523$ at 3 df $p < .01$

RESIDENCE (Continued)

Percentage

	Low	Medium Low	Medium High	High	N
Area 2 - Seward					
Town	18.1	29.6	25.1	27.0	270
Rural	38.8	38.8	15.5	6.7	103
					373

$x^2 = 32.661$ at 3 df $p < .001$

	Low	Medium Low	Medium High	High	N
Area 3 - Henderson					
Town	18.1	22.8	23.6	35.4	127
Rural	34.6	30.7	20.1	14.4	104
					231

$x^2 = 17.483$ at 3 df $p < .001$

	Low	Medium Low	Medium High	High	N
Area 4 - Beatrice					
Town	20.7	24.4	24.4	30.2	294
Rural	43.2	28.3	16.4	11.9	67
					361

$x^2 = 19.809$ at 3 df $p < .001$

EDUCATION

Percentage

	Low	Medium Low	Medium High	High	N
Area 1 - Friend					
0 - 8 years	40.7	29.6	11.1	18.5	54
9 - 11 years	33.3	27.2	24.2	15.1	33
12 years	21.5	27.9	26.8	23.6	93
13 - 14 years	10.0	23.3	23.3	43.3	30
15 + years	4.3	17.3	43.4	34.7	23
					233

$x^2 = 29.610$ at 12 df $p < .01$

	Low	Medium Low	Medium High	High	N
Area 2 - Seward					
0 - 8 years	41.5	44.5	6.9	6.9	101
9 - 11 years	20.4	36.3	31.8	11.3	44
12 years	20.3	33.3	25.2	21.1	123
13 - 14 years	11.7	21.5	37.2	29.4	51
15 + years	13.5	15.2	23.7	47.4	59
					378

$x^2 = 82.170$ at 12 df $p < .001$

EDUCATION (continued)

Percentage

Area 3 - Henderson

	Low	Medium Low	Medium High	High	N
0 - 8 years	30.6	35.4	14.5	19.3	62
9 - 11 years	26.6	26.6	16.6	30.0	30
12 years	26.7	29.0	22.0	22.0	86
13 - 14 years	26.6	10.0	33.3	30.0	30
15 + years	3.5	17.0	30.0	46.4	28
					236

$x^2 = 23.399$ at 12 df $p < .05$

Area 4 - Beatrice

	Low	Medium Low	Medium High	High	N
0 - 8 years	43.8	32.5	15.7	7.8	89
9 - 11 years	29.7	29.7	21.6	18.9	37
12 years	21.3	20.8	27.7	30.0	173
13 - 14 years	11.1	33.3	11.1	44.4	36
15 + years	2.5	15.0	30.0	52.5	40
					375

$x^2 = 64.949$ at 12 df $p < .001$

OCCUPATION

Percentage

Area 1 - Friend

	Low	Medium Low	Medium High	High	N
Farmer	37.9	27.5	15.5	18.9	58
Labor and Clerical	18.7	34.3	31.2	15.6	32
Business and Government	6.0	15.1	36.3	42.4	33
Professional	0.0	10.0	40.0	50.0	10
Housewife	21.7	34.7	23.9	19.5	46
Retired	32.0	24.5	18.8	24.5	53
					232

$x^2 = 33.029$ at 15 df $p < .01$

Area 2 - Seward

	Low	Medium Low	Medium High	High	N
Farmer	36.2	41.7	14.2	7.6	91
Labor and Clerical	5.7	40.3	32.6	21.6	52
Business and Government	8.0	24.0	28.0	40.0	25
Professional	11.1	11.1	25.0	52.7	36
Housewife	18.2	27.9	32.2	21.5	93

OCCUPATION (continued)

	Low	Medium Low	Medium High	High	N
Area 2 - Seward (continued)					
Retired	44.2	35.7	8.5	11.4	70
					367
x^2 = 89.217 at 15 df	$p < .001$				
Area 3 - Henderson					
Farmer	34.8	31.4	19.1	14.6	89
Labor and Clerical	25.0	11.1	36.1	27.7	36
Professional	0.0	12.5	25.0	62.5	16
Housewife	27.0	18.9	18.9	35.1	37
Retired	20.5	43.5	12.8	23.0	39
					217
x^2 = 37.082 at 12 df	$p < .001$				
Area 4 - Beatrice					
Farmer	47.4	28.8	13.5	10.1	59
Labor and Clerical	17.6	27.0	27.0	28.2	85
Business and Government	8.6	15.2	32.6	43.4	46
Professional	0.0	28.5	14.2	57.1	28
Housewife	22.0	20.9	27.9	29.0	86
Retired	38.2	27.9	17.6	16.1	68
					372
x^2 = 64.595 at 15 df	$p < .001$				

INCOME

Percentage

	Low	Medium Low	Medium High	High	N
Area 2 - Seward					
$0 - 5,000	38.2	36.2	16.6	8.8	102
$5,001 - 10,000	19.6	51.9	36.2	40.1	151
$10,001 - 15,000	21.4	22.8	24.2	31.4	70
$15,001 -	26.6	23.3	26.6	23.3	30
					353
x^2 = 34.822 at 9 df	$p < .001$				
Area 3 - Henderson					
$0 - 5,000	30.0	36.6	15.0	18.3	60
$5,001 - 10,000	20.0	22.3	23.5	34.1	85
$10,001 - 15,000	54.1	4.7	17.6	15.2	46
$15,001 -	40.0	17.6	8.2	8.2	34
					225
x^2 = 23.282 at 9 df	$p < .01$				

INCOME (Continued)

Area 4 - Beatrice

	Low	Medium Low	Medium High	High	N
$0 - 5,000	39.3	30.3	17.0	13.4	112
$5,001 - 10,000	20.3	18.4	28.2	22.8	152
$10,001 - 15,000	48.0	11.1	9.8	19.0	73
$15,001 -	9.0	31.8	22.7	36.3	22
					359

$x^2 = 36.941$ at 9 df $p < .001$

AGE

Percentage

Area 1 - Friend

	Low	Medium Low	Medium High	High	N
20 - 35 years	17.4	24.4	26.7	31.3	86
36 - 55 years	22.0	20.3	27.1	30.5	59
56 + years	33.7	33.7	17.4	15.1	86
					231

$x^2 = 15.001$ at 6 df $p < .05$

Area 2 - Seward

	Low	Medium Low	Medium High	High	N
20 - 35 years	17.6	33.8	22.5	25.9	204
36 - 55 years	22.6	30.9	28.5	17.8	84
56 + years	39.0	31.0	14.9	14.9	87
					375

$x^2 = 19.854$ at 6 df $p < .01$

Area 4 - Beatrice

	Low	Medium Low	Medium High	High	N
20 - 35 years	17.9	23.8	23.1	35.0	134
36 - 55 years	18.1	23.6	30.0	28.1	110
56 + years	43.6	31.8	19.0	19.0	125
					369

$x^2 = 26.925$ at 6 df $p < .001$

YEARS IN THE COMMUNITY

Percentage

Area 2 - Seward

	Low	Medium Low	Medium High	High	N
0 - 10 years	16.8	25.6	22.1	35.3	113
11 - 20 years	21.6	30.0	28.3	20.0	60
21 + years	28.2	36.5	20.9	14.1	205
					378

$x^2 = 23.523$ at 6 df $p < .001$

YEARS IN THE COMMUNITY (Continued)

	Low	Medium Low	Medium High	High	N
Area 4 - Beatrice					
0 - 10 years	15.0	23.0	25.0	37.0	100
11 - 20 years	26.2	19.6	29.5	24.5	61
21 + years	28.5	27.5	20.0	23.8	214
					375

x^2 = 13.176 at 6 df $p < .05$

PROPERTY OWNERSHIP

	Low	Medium Low	Medium High	High	N
Area 2 - Seward					
Own	26.5	31.8	23.0	18.5	286
Rent	15.3	34.0	20.8	29.6	91
					377

x^2 = 7.912 at 3 df $p < .05$

	Low	Medium Low	Medium High	High	N
Area 4 - Beatrice					
Own	26.0	24.8	25.3	24.2	284
Rent	19.1	28.0	15.7	37.0	89
					373

x^2 = 8.500 at 3 df $p < .02$

RELIGIOUS PREFERENCE

	Low	Medium Low	Medium High	High	N
Area 2 - Seward					
Methodist	18.0	34.4	32.7	14.7	61
Lutheran	29.4	33.3	13.9	23.2	129
Mennonite	32.0	48.0	16.0	4.0	25
Catholic	25.0	37.5	25.0	12.5	40
Protestant	9.5	19.0	35.7	35.7	42
No Preference	28.5	34.2	20.0	17.1	35
					332

x^2 = 33.766 at 15 df $p < .01$

	Low	Medium Low	Medium High	High	N
Area 4 - Beatrice					
Methodist	33.8	26.1	23.0	16.9	65
Lutheran	28.5	30.3	22.3	18.7	112
Presbyterian	8.6	30.4	30.4	30.4	23
Catholic	15.6	18.7	25.0	40.6	32
Protestant	11.4	20.0	22.8	45.7	35
No Preference	38.7	22.5	14.2	22.5	31
Christian Church	10.0	30.0	16.6	43.3	30
					328

x^2 = 33.605 at 18 df $p < .01$

APPENDIX III

(This appendix includes the rural-town response during the first survey to all statements for all survey areas).

RURAL-URBAN RESPONSE ON INDIVIDUAL STATEMENTS BY ISSUE AND AREA

First Survey

CHLORINATION

Cities should use chlorination to disinfect their water supply

	Percentage			
	Agree	Undecided	Disagree	N
Area 1 - Friend				
Rural	42.4	45.4	12.1	66
Town	55.5	28.3	16.0	162
Total	51.7	33.3	14.9	228
x^2 = 6.141 at 2 df	$p < .05$			
Area 2 - Seward				
Rural	56.3	26.2	17.4	103
Town	56.6	19.2	24.0	270
Total	56.5	21.1	22.2	373
x^2 = 3.162 at 2 df	$p < .30$			
Area 3 - Henderson				
Rural	48.0	33.6	18.2	104
Town	45.6	25.9	28.3	127
Total	46.7	29.4	23.8	231
x^2 = 3.652 at 2 df	$p < .20$			
Area 4 - Beatrice				
Rural	55.2	25.3	19.4	67
Town	53.7	15.9	30.2	294
Total	54.0	17.7	28.2	361
x^2 = 5.015 at 2 df	$p < .10$			

WATER QUALITY & PROPER FARMING METHODS

Hilly land near streams should not be used for crops

Area 1 - Friend				
Rural	30.3	18.1	51.5	66
Town	39.5	23.4	37.0	162
Total	36.8	21.9	41.3	228
x^2 = 4.057 at 2 df	$p < .20$			

	Agree	Undecided	Disagree	N
Hilly land near streams should not be used for crops (continued)				
Area 2 - Seward				
Rural	27.1	7.7	65.0	103
Town	31.8	21.1	47.0	270
Total	30.5	17.4	52.0	373
$x^2 = 12.800$ at 2 df	$p < .01$			
Area 3 - Henderson				
Rural	33.6	15.3	50.9	104
Town	29.1	21.2	49.6	127
Total	31.1	18.6	50.2	231
$x^2 = 1.455$ at 2 df	$p < .50$			
Area 4 - Beatrice				
Rural	28.3	16.4	55.2	67
Town	31.6	20.4	47.9	294
Total	31.0	19.6	49.3	361
$x^2 = 1.214$ at 2 df	$p < .70$			
The use of insecticides and herbicides should not be limited.				
Area 1 - Friend				
Rural	28.7	7.5	63.6	66
Town	17.2	12.9	69.7	162
Total	20.6	11.4	67.9	228
$x^2 = 4.462$ at 2 df	$p < .20$			
Area 2 - Seward				
Rural	38.8	13.5	47.5	103
Town	12.5	8.8	78.5	270
Total	19.8	10.1	69.9	373
$x^2 = 37.703$ at 2 df	$p < .001$			
Area 3 - Henderson				
Rural	37.5	17.3	45.1	104
Town	13.3	11.8	74.8	127
Total	24.2	14.2	61.4	231
$x^2 = 23.079$ at 2 df	$p < .001$			
Area 4 - Beatrice				
Rural	31.3	13.4	55.2	67
Town	7.4	8.1	84.3	294
Total	11.9	9.1	78.9	361
$x^2 = 33.602$ at 2 df	$p < .001$			

Percentage

	Agree	Undecided	Disagree	N
Terracing and contouring on hilly land are needless agricultural expenditures.				
Area 1 - Friend				
Rural	9.0	4.5	86.3	66
Town	10.4	10.4	79.0	162
Total	10.0	8.7	81.1	228
$x^2 = 2.295$ at 2 df	$p < .30$			
Area 2 - Seward				
Rural	7.7	0.9	91.2	103
Town	11.1	4.8	84.0	270
Total	10.1	3.7	86.0	373
$x^2 = 4.201$ at 2 df	$p < .20$			
Area 3 - Henderson				
Rural	14.4	2.8	82.6	104
Town	6.2	7.0	86.6	127
Total	9.9	5.1	84.8	231
$x^2 = 5.837$ at 2 df	$p < .10$			
Area 4 - Beatrice				
Rural	1.4	0.0	98.5	67
Town	7.1	9.1	83.6	294
Total	6.0	7.4	86.4	361
$x^2 = 10.400$ at 2 df	$p < .001$			

Farmers should prevent silt from polluting streams.

	Agree	Undecided	Disagree	N
Area 1 - Friend				
Rural	77.2	10.6	12.1	66
Town	81.4	12.9	5.5	162
Total	80.2	12.2	7.4	228
$x^2 = 3.026$ at 2 df	$p < .30$			
Area 2 - Seward				
Rural	81.5	5.8	12.6	103
Town	84.8	8.1	7.0	270
Total	83.9	7.5	8.5	373
$x^2 = 3.340$ at 2 df	$p < .20$			

Farmers should prevent silt from polluting streams. (continued)

	Agree	Undecided	Disagree	N
Area 3 - Henderson				
Rural	83.6	8.6	7.6	104
Town	88.9	8.6	2.3	127
Total	86.5	8.6	4.7	231
x^2 = 3.598 at 2 df	$p < .20$			
Area 4 - Beatrice				
Rural	91.0	1.4	7.4	67
Town	86.7	3.7	9.5	294
Total	87.5	3.3	9.1	361
x^2 = 1.199 at 2 df	$p < .50$			

Conservation practices on farm land should be required by law.

	Agree	Undecided	Disagree	N
Area 1 - Friend				
Rural	25.7	18.1	56.0	66
Town	47.5	21.0	31.5	162
Total	41.2	20.1	38.5	228
x^2 = 12.915 at 2 df	$p < .01$			
Area 2 - Seward				
Rural	36.8	8.7	54.3	103
Town	55.5	20.0	24.4	270
Total	50.4	16.8	32.7	373
x^2 = 31.163 at 2 df	$p < .001$			
Area 3 - Henderson				
Rural	24.0	16.3	59.6	104
Town	51.9	21.2	26.7	127
Total	39.3	19.0	41.5	231
x^2 = 26.888 at 2 df	$p < .001$			
Area 4 - Beatrice				
Rural	29.8	11.9	58.2	67
Town	54.4	12.5	32.9	294
Total	49.8	12.4	37.6	361
x^2 = 15.834 at 2 df	$p < .001$			

POLLUTION ABATEMENT

All towns and industries should be prohibited from polluting streams.

Percentage

	Agree	Undecided	Disagree	N
Area 1 - Friend				
Rural	92.4	6.0	1.5	66
Town	91.9	4.3	3.7	162
Total	92.1	4.8	3.0	228
$x^2 = 1.026$ at 2 df	$p < .70$			
Area 2 - Seward				
Rural	96.1	1.9	1.9	103
Town	95.1	3.7	1.1	270
Total	95.4	3.2	1.3	373
$x^2 = 1.109$ at 2 df	$p < .70$			
Area 3 - Henderson				
Rural	93.2	2.8	3.8	104
Town	92.1	6.2	1.5	127
Total	92.6	4.7	2.5	231
$x^2 = 2.543$ at 2 df	$p < .30$			
Area 4 - Beatrice				
Rural	89.5	4.4	5.9	67
Town	96.2	2.3	1.3	294
Total	95.0	2.7	2.2	361
$x^2 = 6.356$ at 2 df	$p < .05$			

There has been too much concern over water pollution.

	Agree	Undecided	Disagree	N
Area 1 - Friend				
Rural	34.8	12.1	53.0	66
Town	16.6	9.2	74.0	162
Total	21.9	10.0	67.9	228
$x^2 = 10.504$ at 2 df	$p < .01$			
Area 2 - Seward				
Rural	18.4	11.6	69.9	103
Town	13.7	7.0	71.2	270
Total	15.0	8.3	76.6	373
$x^2 = 3.877$ at 2 df	$p < .20$			

There has been too much concern over water pollution. (continued)

	Agree	Undecided	Disagree	N
Area 3 - Henderson				
Rural	19.2	10.5	70.1	104
Town	18.1	9.4	72.4	127
Total	18.6	9.9	71.4	231
$x^2 = 0.152$ at 2 df	$p < .70$			
Area 4 - Beatrice				
Rural	31.3	7.4	61.1	67
Town	18.0	5.1	76.8	294
Total	20.4	5.5	73.9	361
$x^2 = 7.081$ at 2 df	$p < .05$			

All feedlot operators should be prohibited from polluting streams.

	Agree	Undecided	Disagree	N
Area 1 - Friend				
Rural	72.7	12.1	15.1	66
Town	87.6	3.0	9.2	162
Total	83.3	5.7	10.9	228
$x^2 = 9.452$ at 2 df	$p < .01$			
Area 2 - Seward				
Rural	68.9	9.7	21.3	103
Town	86.6	5.5	7.7	270
Total	81.7	6.7	11.5	373
$x^2 = 16.716$ at 2 df	$p < .001$			
Area 3 - Henderson				
Rural	68.2	9.6	22.1	104
Town	85.0	7.8	7.6	127
Total	77.4	8.6	13.8	231
$x^2 = 11.597$ at 2 df	$p < .01$			
Area 4 - Beatrice				
Rural	49.2	10.4	40.2	67
Town	87.0	4.4	8.5	294
Total	80.0	5.5	14.4	361
$x^2 = 51.620$ at 2 df	$p < .001$			

Only large feedlot operators should be prohibited from polluting streams.

Percentage

	Agree	Undecided	Disagree	N
Area 1 - Friend				
Rural	45.4	9.0	45.4	66
Town	19.1	4.9	72.9	162
Total	26.7	6.1	67.1	228
$x^2 = 19.946$ at 2 df	$p < .001$			
Area 2 - Seward				
Rural	38.8	7.7	53.3	103
Town	24.8	4.8	70.3	270
Total	28.6	5.6	65.5	373
$x^2 = 9.532$ at 2 df	$p < .01$			
Area 3 - Henderson				
Rural	54.8	6.7	38.4	104
Town	14.9	7.0	77.9	127
Total	32.9	6.9	60.1	231
$x^2 = 42.423$ at 2 df	$p < .001$			
Area 4 - Beatrice				
Rural	53.7	4.4	41.7	67
Town	17.6	4.7	77.5	294
Total	24.3	4.7	70.9	351
$x^2 = 38.930$ at 2 df	$p < .001$			

TAX SUPPORT FOR POLLUTION ABATEMENT

I would rather have low taxes and low consumer prices than clean rivers.

Percentage

	Agree	Undecided	Disagree	N
Area 1 - Friend				
Rural	24.2	33.3	42.4	66
Town	20.3	18.5	61.1	162
Total	21.4	22.8	55.7	228
$x^2 = 7.779$ at 2 df	$p < .05$			

I would rather have low taxes and low consumer prices than clean rivers.
(continued)

	Agree	Undecided	Disagree	N
Area 2 - Seward				
Rural	25.2	27.1	47.5	103
Town	12.9	17.7	69.2	270
Total	16.3	20.3	63.2	373
$x^2 = 15.654$ at 2 df	$p < .001$			
Area 3 - Henderson				
Rural	25.9	25.9	48.0	104
Town	22.0	14.9	62.9	127
Total	23.8	19.9	56.2	231
$x^2 = 6.103$ at 2 df	$p < .05$			
Area 4 - Beatrice				
Rural	23.8	19.4	56.7	67
Town	16.3	16.6	67.0	294
Total	17.7	17.1	65.0	361
$x^2 = 2.881$ at 2 df	$p < .30$			

RECREATION

We need more lakes and parks for recreation.

	Agree	Undecided	Disagree	N
Area 1 - Friend				
Rural	48.4	15.1	36.3	66
Town	52.4	13.5	33.9	162
Total	51.3	14.0	34.6	228
$x^2 = .306$ at 2 df	$p < .90$			
Area 2 - Seward				
Rural	44.6	10.6	44.6	103
Town	47.7	17.0	35.1	270
Total	46.9	15.2	37.8	373
$x^2 = 3.897$ at 2 df	$p < .20$			
Area 3 - Henderson				
Rural	34.6	13.4	51.9	104
Town	49.6	20.4	29.9	127
Total	42.8	17.3	39.8	231
$x^2 = 11.570$ at 2 df	$p < .01$			

We need more lakes and parks for recreation. (Continued)

	Agree	Undecided	Disagree	N
Area 4 - Beatrice				
Rural	40.2	11.9	47.7	67
Town	62.2	12.5	25.1	294
Total	58.1	12.4	29.3	361

$x^2 = 14.020$ at 2 df $p < .001$

Parks should not be included in small watershed projects.

	Agree	Undecided	Disagree	N
Area 1 - Friend				
Rural	39.3	27.2	33.3	66
Town	29.6	28.3	41.9	162
Total	32.4	28.0	39.4	228

$x^2 = 2.285$ at 2 df $p < .50$

	Agree	Undecided	Disagree	N
Area 2 - Seward				
Rural	33.9	13.5	52.4	103
Town	28.1	27.7	44.0	270
Total	29.7	23.8	46.3	373

$x^2 = 8.261$ at 2 df $p < .02$

	Agree	Undecided	Disagree	N
Area 3 - Henderson				
Rural	56.7	23.0	20.1	104
Town	22.8	37.7	39.3	127
Total	38.0	31.1	30.7	231

$x^2 = 28.060$ at 2 df $p < .001$

	Agree	Undecided	Disagree	N
Area 4 - Beatrice				
Rural	53.7	13.4	32.8	67
Town	32.3	20.7	46.9	294
Total	36.2	19.3	44.3	361

$x^2 = 10.852$ at 2 df $p < .01$

SPECIAL DISTRICTS

Have you heard anything about the proposed Natural Resource Districts?

Percentage

Area 1 - Friend	Yes	No	N
Rural	17.1	82.8	70
Town	21.6	78.3	157
Total	20.2	79.7	227
Area 2 - Seward			
Rural	23.4	76.5	111
Town	13.5	86.4	266
Total	16.4	83.5	377
Area 3 - Henderson			
Rural	19.6	80.3	117
Town	8.8	91.2	125
Total	14.0	85.9	242
Area 4 - Beatrice			
Rural	15.4	84.5	84
Town	11.0	88.9	281
Total	12.0	87.9	365

The newly proposed Natural Resource Districts would be better than the present Soil and Water Conservation Districts.

Percentage

	Agree	Undecided	Disagree	N
Area 1 - Friend				
Rural	25.0	41.6	33.3	12
Town	29.4	61.7	8.8	34
Total	28.2	56.5	15.2	46
Area 2 - Seward				
Rural	38.4	23.0	38.4	26
Town	41.6	30.5	27.7	36
Total	40.3	27.4	32.2	62
Area 3 - Henderson				
Rural	43.4	30.4	26.0	23
Town	45.4	45.4	9.0	11
Total	44.1	35.2	20.5	34

The newly proposed Natural Resource Districts would be better than the present Soil and Water Conservation Districts. (Continued)

	Agree	Undecided	Disagree	N
Area 4 - Beatrice				
Rural	46.1	23.0	30.7	13
Town	25.8	54.8	19.3	31
Total	31.8	45.4	22.7	44

Organizations for conserving soil and water should be smaller than a whole watershed area.

	Agree	Undecided	*Disagree	N
Area 1 - Friend				
Rural	46.9	31.8	21.2	66
Town	26.5	53.0	20.3	162
Total	32.4	46.9	20.6	228
$x^2 = 10.564$ at 2 df	$p < .01$			
Area 2 - Seward				
Rural	51.4	26.2	22.3	103
Town	30.3	48.1	21.4	270
Total	36.1	42.0	21.7	373
$x^2 = 17.706$ at 2 df	$p < .001$			
Area 3 - Henderson				
Rural	43.2	26.9	29.8	104
Town	23.6	64.5	11.8	127
Total	32.4	47.6	19.9	231
$x^2 = 33.112$ at 2 df	$p < .001$			
Area 4 - Beatrice				
Rural	34.3	23.8	41.7	67
Town	26.1	49.3	24.4	294
Total	27.7	44.5	27.7	361
$x^2 = 15.118$ at 2 df	$p < .001$			

IRRIGATION (First Survey)

Reuse of irrigation water should be required by law.

Percentage

	Agree	Undecided	Disagree	N
Area 1 - Friend				
Rural	77.2	12.1	10.6	66
Town	62.3	19.1	18.5	162
Total	66.6	17.1	16.3	228
$x^2 = 4.725$ at 2 df	$p < .10$			
Area 2 - Seward				
Rural	71.8	9.7	18.4	103
Town	66.6	21.1	12.2	270
Total	68.0	17.9	13.9	373
$x^2 = 7.762$ at 2 df	$p < .05$			
Area 3 - Henderson				
Rural	51.9	9.6	38.4	104
Town	62.9	17.3	19.6	127
Total	58.0	13.8	28.1	231
$x^2 = 10.823$ at 2 df	$p < .01$			
Area 4 - Beatrice				
Rural	65.6	7.4	26.8	67
Town	64.9	20.4	14.6	294
Total	65.0	18.0	16.8	361
$x^2 = 9.920$ at 2 df	$p < .02$			

There should be no regulation of the amount of irrigation water pumped from streams.

	Agree	Undecided	Disagree	N
Area 1 - Friend				
Rural	6.0	3.0	90.9	66
Town	11.7	8.0	80.2	162
Total	10.0	6.5	83.3	228
$x^2 = 3.911$ at 2 df	$p < .20$			
Area 2 - Seward				
Rural	14.5	4.8	80.5	103
Town	10.3	4.8	84.8	270
Total	11.5	4.8	83.6	373
$x^2 = 1.296$ at 2 df	$p < .70$			

There should be no regulation of the amount of irrigation water pumped from streams. (Continued)

	Agree	Undecided	Disagree	N
Area 3 - Henderson				
Rural	21.1	13.4	65.3	104
Town	15.7	14.1	70.0	127
Total	18.1	13.8	67.9	231
x^2 = 1.125 at 2 df	$p < .30$			
Area 4 - Beatrice				
Rural	8.9	5.9	85.0	67
Town	8.1	7.8	84.0	294
Total	8.3	7.4	84.2	361
x^2 = 0.298 at 2 df	$p < .90$			

Irrigators should be able to use an unlimited amount of ground water.

	Percentage			
	Agree	Undecided	Disagree	N
Area 1 - Friend				
Rural	27.2	9.0	63.6	66
Town	27.1	11.1	61.7	162
Total	27.1	10.5	62.2	228
x^2 = 0.209 at 2 df	$p < .70$			
Area 2 - Seward				
Rural	31.0	12.6	56.3	103
Town	25.1	7.7	67.0	270
Total	26.8	9.1	64.0	373
x^2 = 4.220 at 2 df	$p < .20$			
Area 3 - Henderson				
Rural	38.4	5.7	55.7	104
Town	35.4	9.4	55.1	127
Total	36.7	7.7	55.4	231
x^2 = 1.140 at 2 df	$p < .50$			
Area 4 - Beatrice				
Rural	17.9	11.9	70.1	67
Town	25.8	9.8	64.2	294
Total	24.3	10.2	65.3	361
x^2 = 1.927 at 2 df	$p < .50$			

Second Survey

Irrigators should be able to use an unlimited amount of ground water.

Percentage

	Agree	Undecided	Disagree	N
Area 1 - Friend				
Rural	21.2	7.5	71.2	80
Town	23.3	5.1	71.4	154
Total	22.6	5.9	71.3	234
$x^2 = 0.540$ at 2 df	$p < .50$			
Area 2 - Seward				
Rural	25.8	8.3	65.8	120
Town	14.5	6.4	79.0	262
Total	18.0	7.0	74.6	382
$x^2 = 17.13$ at 2 df	$p < .001$			
Area 3 - Henderson				
Rural	40.1	6.5	53.2	122
Town	32.5	7.7	59.6	129
Total	36.2	7.1	56.5	251
$x^2 = 5.36$ at 2 df	$p < .10$			
Area 4 - Beatrice				
Rural	23.0	10.9	65.9	91
Town	18.7	12.2	69.0	304
Total	19.7	11.8	68.3	395
$x^2 = 0.82$ at 2 df	$p < .50$			

Irrigation wells in this county should be metered by local conservation districts.

	Agree	Undecided	Disagree	N
Area 1 - Friend				
Rural	47.5	13.7	38.7	80
Town	50.0	24.6	25.3	154
Total	49.1	20.9	29.9	234
$x^2 = 5.22$ at 2 df	$p < .10$			
Area 2 - Seward				
Rural	42.5	27.5	30.0	120
Town	53.0	29.3	17.5	262
Total	49.7	28.7	21.4	382
$x^2 = 7.10$ at 2 df	$p < .05$			

Irrigation wells in this county should be metered by local conservation districts. (Continued)

	Agree	Undecided	Disagree	N
Area 3 - Henderson				
Rural	34.4	18.8	46.7	122
Town	36.7	31.2	32.0	128
Total	35.6	25.2	39.2	250
$x^2 = 7.31$ at 2 df	$p < .05$			
Area 4 - Beatrice				
Rural	47.2	21.9	30.7	91
Town	52.8	28.0	19.1	303
Total	51.5	26.6	21.8	394
$x^2 = 5.69$ at 2 df	$p < .10$			

First Survey

FLOOD CONTROL

Small watershed projects are not a necessary expenditure.

Percentage

	Agree	Undecided	Disagree	N
Area 1 - Friend				
Rural	21.2	15.1	63.6	66
Town	22.2	25.3	52.4	162
Total	21.9	22.3	55.7	228
$x^2 = 3.234$ at 2 df	$p < .20$			
Area 2 - Seward				
Rural	12.6	7.7	79.6	103
Town	16.2	23.7	60.0	270
Total	15.2	19.3	65.4	373
$x^2 = 14.852$ at 2 df	$p < .001$			
Area 3 - Henderson				
Rural	17.3	13.4	69.2	104
Town	19.6	23.6	56.6	127
Total	18.6	19.0	62.3	231
$x^2 = 4.714$ at 2 df	$p < .10$			

Small watershed projects are not a necessary expenditure. (Continued)

	Agree	Undecided	Disagree	N
Area 4 - Beatrice				
Rural	20.8	7.4	71.6	67
Town	17.6	21.0	61.2	294
Total	18.2	18.5	63.1	361
x^2 = 6.703 at 2 df	$p < .05$			

The city council should prohibit people from building on flood plains.

Area 1 - Friend				
Rural	71.2	16.6	12.1	66
Town	62.9	17.9	19.1	162
Total	65.3	17.5	17.1	228
x^2 = 1.878 at 2 df	$p < .50$			
Area 2 - Seward				
Rural	65.0	19.4	15.5	103
Town	58.1	20.3	21.4	270
Total	60.0	20.1	19.8	373
x^2 = 1.954 at 2 df	$p < .50$			
Area 3 - Henderson				
Rural	58.6	16.3	25.0	104
Town	64.5	21.2	14.1	127
Total	61.9	19.0	19.0	231
x^2 = 4.566 at 2 df	$p < .20$			
Area 4 - Beatrice				
Rural	50.7	20.8	28.3	67
Town	66.3	14.9	18.7	294
Total	63.4	16.0	20.4	361
x^2 = 5.761 at 2 df	$p < .10$			

The clearing of river channels is a waste of time and money.

Area 1 - Friend				
Rural	31.8	25.7	42.4	66
Town	18.5	17.9	63.5	162
Total	22.3	20.1	57.4	228
x^2 = 8.795 at 2 df	$p < .02$			
Area 2 - Seward				
Rural	27.1	7.7	65.0	103
Town	12.5	15.9	71.4	270

The clearing of river channels is a waste of time and money.

	Agree	Undecided	Disagree	N
Area 2 - Seward (Continued)				
Total	16.6	13.6	69.7	373
$x^2 = 13.623$ at 2 df	$p < .01$			
Area 3 - Henderson				
Rural	25.9	18.2	55.7	104
Town	19.6	22.8	57.4	127
Total	22.5	20.7	56.7	231
$x^2 = 1.603$ at 2 df	$p < .50$			
Area 4 - Beatrice				
Rural	29.8	13.4	56.7	67
Town	13.6	16.6	69.7	294
Total	16.6	16.0	67.3	361
$x^2 = 10.391$ at 2 df	$p < .01$			

Large reservoirs should be constructed to protect against flood damage.

Area 1 - Friend				
Rural	63.6	15.1	21.2	66
Town	68.5	14.1	17.2	162
Total	67.1	14.4	18.4	228
$x^2 = 0.588$ at 2 df	$p < .80$			
Area 2 - Seward				
Rural	55.3	11.6	33.0	103
Town	72.5	19.6	7.7	270
Total	67.8	17.4	14.7	373
$x^2 = 38.187$ at 2 df	$p < .001$			
Area 3 - Henderson				
Rural	64.4	16.3	19.2	104
Town	70.8	19.6	9.4	127
Total	67.9	18.1	13.8	231
$x^2 = 4.649$ at 2 df	$p < .10$			
Area 4 - Beatrice				
Rural	62.6	13.4	23.8	67
Town	80.2	12.2	7.4	294
Total	77.0	12.4	10.5	361
$x^2 = 16.190$ at 2 df	$p < .001$			

Second Survey

Large reservoirs should be constructed to protect against flood damage.

	Percentage			
	Agree	Undecided	Disagree	N
Area 1 - Friend				
Rural	62.5	15.0	22.5	80
Town	75.6	12.5	11.8	152
Total	71.1	13.3	15.5	232
$x^2 = 5.34$ at 2 df	$p < .05$			
Area 2 - Seward				
Rural	53.7	10.0	36.1	119
Town	69.9	15.9	14.0	263
Total	64.9	14.1	20.9	382
$x^2 = 24.32$ at 2 df	$p < .001$			
Area 3 - Henderson				
Rural	71.4	10.9	17.6	119
Town	74.4	15.2	10.4	125
Total	72.9	13.1	13.9	244
$x^2 = 3.18$ at 2 df	$p < .10$			
Area 4 - Beatrice				
Rural	64.8	8.7	26.3	91
Town	76.8	15.1	7.9	303
Total	74.1	13.7	12.1	394
$x^2 = 23.01$ at 2 df	$p < .001$			

A large flood control dam should be built on Turkey Creek.

	Agree	Undecided	Disagree	N
Area 1 - Friend				
Rural	35.0	18.7	46.2	80
Town	25.9	34.4	39.6	154
Total	29.0	29.0	41.8	234
$x^2 = 6.19$ at 2 df	$p < .05$			

A large flood control dam should be built on Lincoln Creek west of Seward.

	Agree	Undecided	Disagree	N
Area 2 - Seward				
Rural	20.1	46.6	36.1	119
Town	35.4	42.3	22.1	262
Total	30.7	42.7	26.5	381
$x^2 = 11.37$ at 2 df	$p < .01$			

A large flood control dam should be built on the Blue River near Beaver Crossing.

Area 2 - Seward

Rural	16.8	32.7	50.4	119
Town	34.3	43.8	21.7	262
Total	28.8	40.4	30.7	381

$x^2 = 33.09$ at 2 df $p < .001$

Large flood control dams should be built on the upper Big Blue River.

Area 3 - Henderson

Rural	37.7	35.2	27.0	122
Town	45.7	39.5	14.7	129
Total	41.8	37.4	20.7	251

$x^2 = 5.84$ at 2 df $p < .10$

Area 4 - Beatrice

Rural	45.0	26.3	28.5	91
Town	53.7	32.6	13.5	303
Total	51.7	31.2	17.0	394

$x^2 = 10.48$ at 2 df $p < .01$

APPENDIX IV

(This appendix includes all statistically significant differences between variables other than residence for all statements in all survey areas. In some tables the undecided dolumn has been omitted because of low cell frequencies so that a valid test of statistical significance could be made.)

FIRST SURVEY

SIGNIFICANT OCCUPATION RESPONSES ON INDIVIDUAL QUESTIONS BY ISSUE AND AREA

CHLORINATION

Cities should use chlorination to disinfect their water supply.

Percentage

	Agree	Undecided	Disagree	N
Area 4 - Beatrice				
Retired	38.2	20.5	41.1	68
Farmer	54.2	22.0	23.7	59
Labor & Clerical	48.6	20.2	31.0	74
Business & Government	58.6	17.3	23.9	46
Professional	78.5	10.7	10.7	28
Housewife	62.7	13.9	23.2	86
Total	57.5	18.0	27.4	361

$x^2 = 19.527$ at 10 df $p < .05$

WATER QUALITY AND PROPER FARMING METHODS

The use of insecticides and herbicides should not be limited.

	Agree	Undecided	Disagree	N
Area 2 - Seward				
Retired	18.5	18.5	62.8	70
Farmer	39.5	13.1	47.2	91
Labor & Clerical	15.5	4.4	80.0	45
Business & Government	8.0	8.0	84.0	25
Professional	8.3	8.3	83.3	36
Housewife	13.9	9.6	76.3	93
Total	20.5	11.3	68.0	360

$x^2 = 39.398$ at 10 df $p < .001$

	Agree	Undecided	Disagree	N
Area 3 - Henderson				
Retired	20.5		79.4	34
Farmer	44.0		56.0	75
Labor & Clerical	24.0		76.0	25
Business & Government	14.2		85.7	14
Professional	0.0		100.0	13
Housewife	21.8		78.1	32
Total	28.8		71.1	193

$x^2 = 17.395$ at 5 df $p < .01$

(WATER QUALITY) Continued

Area 4 - Beatrice	Percentage Agree	Undecided	Disagree	N
Retired	10.2	5.8	83.8	68
Farmer	33.8	13.5	52.5	59
Labor & Clerical	0.0	10.8	89.1	74
Business & Government	8.6	4.3	86.9	46
Professional	3.5	3.5	92.8	28
Housewife	12.7	9.3	77.9	86
Total	11.9	8.5	79.5	361

$x^2 = 46.941$ at 10 df $p < .001$

Conservation practices on farm land should be required by law.

Area 1 - Friend

Retired	47.1	20.7	32.0	53
Farmer	20.6	15.5	63.7	58
Labor & Clerical	37.5	18.7	43.7	32
Business & Government	57.5	15.1	27.2	33
Professional	60.0	20.0	20.0	10
Housewife	47.8	28.2	23.9	46
Total	41.3	19.8	38.7	232

$x^2 = 27.365$ at 10 df $p < .01$

Area 2 - Seward

Retired	41.4	24.2	34.2	70
Farmer	37.3	9.8	52.7	91
Labor & Clerical	60.0	17.7	22.2	45
Business & Government	48.0	20.0	32.0	25
Professional	72.2	8.3	19.4	36
Housewife	52.6	22.5	24.7	93
Total	49.1	17.5	33.3	360

$x^2 = 32.820$ at 10 df $p < .001$

Area 3 - Henderson

Retired	48.7	17.9	33.3	39
Farmer	25.8	13.4	60.6	89
Labor & Clerical	37.9	27.5	24.4	29
Business & Government	47.0	17.6	35.2	17
Professional	68.7	18.7	12.5	16
Housewife	40.5	29.7	29.7	37
Total	38.3	19.3	42.2	227

$x^2 = 26.893$ at 10 df $p < .01$

Conservation practices on farm land should be required by law. (Continued)

	Agree	Undecided	Disagree	N
Area 4 - Beatrice				
Retired	48.5	14.7	36.7	68
Farmer	30.5	11.8	57.6	59
Labor & Clerical	52.7	12.1	35.1	74
Business & Government	36.9	13.0	50.0	46
Professional	71.4	10.7	17.8	28
Housewife	61.6	13.9	24.4	86
Total	49.8	13.0	37.1	361

x^2 = 26.892 at 10 df $p < .01$

POLLUTION ABATEMENT

There has been too much concern over water pollution.

Area 1 - Friend			
Retired	27.6	72.3	47
Farmer	38.0	62.0	50
Labor & Clerical	13.7	86.2	29
Business & Government	9.6	90.3	31
Professional	0.0	100.0	9
Housewife	28.5	71.4	42
Total	24.5	75.4	208

x^2 = 13.948 at 5 df $p < .02$

Area 2 - Seward			
Retired	34.4	65.5	58
Farmer	21.5	78.4	79
Labor & Clerical	6.8	93.1	44
Business & Government	8.0	92.0	25
Professional	8.3	91.6	36
Housewife	14.7	85.2	88
Total	17.5	82.4	330

x^2 = 19.989 at 5 df $p < .01$

Area 3 - Henderson			
Retired	47.2	52.7	36
Farmer	23.0	76.9	78
Labor & Clerical	7.4	92.5	27
Business & Government	5.8	94.1	17
Professional	0.0	100.0	15
Housewife	19.3	80.6	31
Total	21.5	78.4	204

x^2 = 23.998 at 5 df $p < .001$

There has been too much concern over water pollution. (Continued)

Area 4 - Beatrice

	Agree	Undecided	Disagree	N
Retired	36.5		63.4	63
Farmer	35.8		64.1	53
Labor & Clerical	20.0		80.0	70
Business & Government	10.8		89.1	46
Professional	7.1		92.8	28
Housewife	15.8		75.6	82
Total	22.2		77.7	342

$x^2 = 22.370$ at 5 df $p < .001$

All feedlot operations should be prohibited from polluting streams.

Area 2 - Seward

	Agree	Undecided	Disagree	N
Retired	77.7		22.2	63
Farmer	74.3		25.6	82
Labor & Clerical	93.0		6.9	43
Business & Government	95.8		4.1	24
Professional	96.9		3.0	33
Housewife	96.6		3.3	90
Total	87.1		12.8	335

$x^2 = 29.951$ at 5 df $p < .001$

Area 4 - Beatrice

	Agree	Undecided	Disagree	N
Retired	83.0		16.9	65
Farmer	50.0		50.0	52
Labor & Clerical	90.1		9.8	71
Business & Government	91.3		8.6	46
Professional	96.1		3.8	26
Housewife	95.0		4.9	81
Total	84.4		15.5	341

$x^2 = 60.166$ at 5 df $p < .001$

Only large feedlot operators should be prohibited from polluting streams.

Area 1 - Friend

	Agree	Undecided	Disagree	N
Retired	21.5		78.4	51
Farmer	52.9		47.0	51
Labor & Clerical	22.5		77.4	31
Business & Government	13.7		86.2	29
Professional	20.0		80.0	10
Housewife	22.7		77.2	44
Total	28.2		71.7	216

$x^2 = 20.946$ at 5 df $p < .001$

Only large feedlot operators should be prohibited from polluting streams.(Cont.)

Area 2 - Seward

	Agree	Undecided	Disagree	N
Retired	32.8		67.1	64
Farmer	45.7		54.2	83
Labor & Clerical	34.8		65.1	43
Business & Government	16.6		83.3	24
Professional	20.0		80.0	35
Housewife	22.2		76.6	90
Total	31.0		68.3	339

x^2 = 15.554 at 5 df $p < .01$

Area 3 - Henderson

	Agree	Undecided	Disagree	N
Retired	27.2		72.7	33
Farmer	59.7		40.2	82
Labor & Clerical	20.6		79.3	29
Business & Government	43.7		56.2	16
Professional	12.5		87.5	16
Housewife	14.7		85.2	34
Total	37.1		62.8	210

x^2 = 34.491 at 5 df $p < .001$

Area 4 - Beatrice

	Agree	Undecided	Disagree	N
Retired	31.8		68.1	66
Farmer	58.7		41.0	56
Labor & Clerical	22.5		77.4	71
Business & Government	26.6		73.3	45
Professional	11.1		88.8	27
Housewife	15.0		85.0	80
Total	28.1		71.8	345

x^2 = 38.567 at 5 df $p < .001$

TAX SUPPORT FOR POLLUTION ABATEMENT AND CONSERVATION

I would rather have low taxes and low consumer prices than clean rivers.

Area 1 - Friend

	Agree	Undecided	Disagree	N
Retired	32.0	11.3	56.6	53
Farmer	20.6	31.0	48.2	58
Labor & Clerical	18.7	34.3	46.8	32
Business & Government	9.0	18.1	72.7	33
Professional	0.0	20.0	80.0	10
Housewife	23.9	21.7	54.3	46
Total	21.1	22.8	56.0	232

x^2 = 18.459 at 10 df $p < .05$

I would rather have low taxes and low consumer prices than clean rivers.(Cont.)

	Agree	Undecided	Disagree	N
Area 2 - Seward				
Retired	20.0	32.8	47.1	70
Farmer	25.2	26.3	48.3	91
Labor & Clerical	11.1	20.0	68.8	45
Business & Government	12.0	12.0	76.0	25
Professional	11.1	5.5	83.3	36
Housewife	10.7	13.9	75.2	93
Total	16.3	20.5	63.0	360

$x^2 = 33.246$ at 10 df $p < .001$

	Agree	Undecided	Disagree	N
Area 4 - Beatrice				
Retired	35.2	16.1	48.5	68
Farmer	25.4	18.6	55.9	59
Labor & Clerical	13.5	17.5	68.9	74
Business & Government	8.6	13.0	78.2	46
Professional	10.7	17.8	71.4	28
Housewife	12.7	17.4	69.7	86
Total	18.5	16.8	64.5	361

$x^2 = 23.747$ at 10 df $p < .01$

RECREATION

We need more lakes and parks for recreation

	Agree	Undecided	Disagree	N
Area 1 - Friend				
Retired	54.3		45.6	46
Farmer	63.2		36.7	49
Labor & Clerical	63.3		36.6	30
Business & Government	73.0		26.9	26
Professional	0.0		100.0	8
Housewife	56.4		43.5	39
Total	39.8		60.1	198

$x^2 = 12.540$ at 5 df $p < .05$

	Agree	Undecided	Disagree	N
Area 4 - Beatrice				
Retired	42.6	13.2	44.1	68
Farmer	44.0	13.5	42.3	59
Labor & Clerical	71.6	5.4	22.9	74
Business & Government	63.0	19.5	17.3	46
Professional	78.5	20.7	10.7	28
Housewife	59.3	12.7	27.9	86
Total	58.1	12.1	29.6	361

$x^2 = 29.365$ at 10 df $p < .01$

	Agree	Undecided	Disagree	N
Parks should not be included in small watershed projects.				
Area 2 - Seward				
Retired	35.7	32.8	31.4	70
Farmer	32.9	14.2	52.7	91
Labor & Clerical	33.3	15.5	51.1	45
Business & Government	24.0	16.0	60.0	25
Professional	11.1	13.8	75.0	36
Housewife	32.2	39.7	27.9	93
Total	30.5	24.7	44.7	360

$x^2 = 43.233$ at 10 df $p < .001$

Area 3 - Henderson				
Retired	28.2	33.3	38.4	39
Farmer	58.4	20.2	21.3	89
Labor & Clerical	34.4	24.1	41.3	29
Business & Government	35.2	29.4	35.2	17
Professional	18.7	43.7	37.5	16
Housewife	27.0	43.2	29.7	37
Total	40.5	29.0	30.3	227

$x^2 = 23.821$ at 10 df $p < .01$

Area 4 - Beatrice				
Retired	44.1	22.0	33.8	68
Farmre	47.4	15.2	37.2	59
Labor & Clerical	37.8	21.6	40.5	74
Business & Government	26.0	10.8	63.0	46
Professional	32.1	10.7	57.1	28
Housewife	26.7	25.5	47.6	86
Total	36.0	19.3	44.5	361

$x^2 = 19.780$ at 10 df $p < .05$

SPECIAL DISTRICTS

Organizations for conserving soil and water should be smaller than a whole watershed area.

Area 1 - Friend				
Retired	32.0	52.8	15.0	53
Farmer	46.5	31.0	22.4	58
Labor & Clerical	18.7	68.7	12.5	32
Business & Government	27.2	33.3	39.3	33
Professional	40.0	20.0	40.0	10

	Agree	Undecided	Disagree	N
Area 1 - Friend (Continued)				
Housewife	23.9	63.0	13.0	46
Total	31.8	47.4	20.6	232

$x^2 = 29.608$ at 10 df $p < .01$

	Agree	Undecided	Disagree	N
Area 2 - Seward				
Retired	31.4	54.2	14.2	70
Farmer	53.8	23.0	23.0	91
Labor & Clerical	26.6	42.2	31.1	45
Business & Government	48.0	28.0	24.0	25
Professional	33.3	38.8	27.7	36
Housewife	24.7	56.9	18.2	93
Total	36.1	42.2	21.6	360

$x^2 = 35.133$ at 10 df $p < .001$

	Agree	Undecided	Disagree	N
Area 3 - Henderson				
Retired	30.7	31.2	17.9	39
Farmer	43.8	23.5	32.5	89
Labor & Clerical	24.1	65.5	10.3	29
Business & Government	35.2	52.9	11.7	17
Professional	25.0	62.5	12.5	16
Housewife	21.6	67.5	10.8	37
Total	33.4	45.8	20.7	227

$x^2 = 33.520$ at 10 df $p < .001$

	Agree	Undecided	Disagree	N
Area 4 - Beatrice				
Retired	73.1	23.6	12.9	68
Farmer	37.2	23.7	38.9	59
Labor & Clerical	14.8	55.4	29.7	74
Business & Government	30.1	30.4	39.1	46
Professional	14.2	53.5	32.1	28
Housewife	20.9	60.4	18.6	86
Total	28.5	43.7	27.7	361

$x^2 = 49.134$ at 10 df $p < .001$

IRRIGATION

Reuse of irrigation water should be required by law.

	Agree	Undecided	Disagree	N
Area 2 - Seward				
Retired	75.7	10.0	14.2	70
Farmer	73.6	8.7	17.5	91

	Agree	Undecided	Disagree	N
Area 2 - Seward (Continued)				
Labor & Clerical	64.4	28.8	6.6	45
Business & Government	76.0	16.0	8.0	25
Professional	50.0	36.1	13.8	36
Housewife	64.5	20.4	15.0	93
Total	68.3	17.7	13.8	360

$x^2 = 23.381$ at 10 df $p < .01$

Area 3 - Henderson	Agree	Undecided	Disagree	N
Retired	78.1		21.8	32
Farmer	53.8		46.1	78
Labor & Clerical	77.7		22.2	27
Business & Government	80.0		20.0	15
Professional	78.5		21.4	14
Housewife	74.1		25.8	31
Total	68.0		31.9	197

$x^2 = 12.137$ at 5 df $p < .05$

Irrigators should be able to use an unlimited amount of ground water.

Area 4 - Beatrice	Agree	Undecided	Disagree	N
Retired	45.5	10.2	44.1	68
Farmer	18.6	11.8	69.4	59
Labor & Clerical	22.9	5.4	71.6	74
Business & Government	17.3	8.6	73.9	46
Professional	10.7	10.7	78.5	28
Housewife	23.2	12.7	63.9	86
Total	24.9	9.9	65.0	361

$x^2 = 25.250$ at 10 df $p < .01$

FLOOD CONTROL

Small watershed projects are not a necessary expenditure.

Area 2 - Seward	Agree	Undecided	Disagree	N
Retired	22.8	31.4	45.7	70
Farmer	14.2	5.4	80.2	91
Labor & Clerical	15.5	15.5	68.8	45
Business & Government	12.0	8.0	80.0	25
Professional	5.5	13.8	80.5	36
Housewife	19.3	32.2	48.3	93
Total	16.3	19.7	63.8	360

$x^2 = 43.468$ at 10 df $p < .001$

	Agree	Undecided	Disagree	N
Small watershed projects are not a necessary expenditure. (Continued)				
Area 4 - Beatrice				
Retired	27.9	22.0	50.0	68
Farmer	25.4	5.0	69.4	59
Labor & Clerical	21.6	16.2	62.1	74
Business & Government	10.8	15.2	73.9	46
Professional	7.1	14.2	78.5	28
Housewife	10.4	29.0	60.4	86
Total	18.2	18.6	63.4	361
x^2 = 28.225 at 10 df $p < .01$				
The city council should prohibit people from building on flood plains.				
Area 1 - Friend				
Retired	75.5		24.4	45
Farmer	89.3		10.6	47
Labor & Clerical	69.5		30.4	23
Business & Government	93.1		6.8	29
Professional	55.5		44.4	9
Housewife	75.6		24.3	37
Total	80.0		20.0	190
x^2 = 11.600 at 5 df $p < .05$				
Area 2 - Seward				
Retired	72.4		27.5	58
Farmer	84.9		10.5	73
Labor & Clerical	66.6		33.3	36
Business & Government	70.0		30.0	20
Professional	54.1		45.8	24
Housewife	80.0		20.0	75
Total	75.1		24.8	286
x^2 = 12.225 at 5 df $p < .05$				
The clearing of river channels is a waste of time and money.				
Area 1 - Friend				
Retired	37.7	11.3	50.9	53
Farmer	25.8	27.5	46.5	58
Labor & Clerical	18.7	18.7	46.5	32
Business & Government	12.1	12.1	75.7	33
Professional	10.0	20.0	70.0	10
Housewife	15.2	26.0	58.6	46
Total	22.8	19.8	57.3	232
x^2 = 18.728 at 10 df $p < .05$				

The clearing of river channels is a waste of time and money. (Continued)

	Agree	Undecided	Disagree	N
Area 2 - Seward				
Retired	22.8	27.1	50.0	70
Farmer	27.4	8.7	63.7	91
Labor & Clerical	13.3	11.1	75.5	45
Business & Government	8.0	4.0	88.0	25
Professional	5.5	13.8	80.5	36
Housewife	11.8	15.0	73.1	93
Total	17.2	14.4	68.3	360

$x^2 = 31.563$ at 10 df $p < .001$

Area 4 - Beatrice				
Retired	23.5	17.6	58.8	68
Farmer	30.5	13.5	55.9	59
Labor & Clerical	16.2	9.4	74.3	74
Business & Government	15.2	10.4	73.9	46
Professional	7.1	10.7	82.1	28
Housewife	8.1	23.2	68.6	86
Total	17.1	15.2	67.5	361

$x^2 = 23.766$ at 10 df $p < .01$

Large reservoirs should be constructed to protect against flood damage.

Area 2 - Seward				
Retired	68.5	22.8	8.5	70
Farmer	57.1	8.7	34.0	91
Labor & Clerical	80.0	15.5	4.4	45
Business & Government	68.0	12.0	20.0	25
Professional	72.2	19.4	8.3	36
Housewife	68.8	21.5	9.6	93
Total	67.5	16.9	15.5	360

$x^2 = 38.745$ at 10 df $p < .001$

Area 4 - Beatrice				
Retired	83.9		16.0	56
Farmer	72.5		27.4	51
Labor & Clerical	90.4		9.5	63
Business & Government	97.6		2.3	42
Professional	86.9		13.0	23
Housewife	93.5		6.4	78
Total	87.8		12.1	313

$x^2 = 18.592$ at 5 df $p < .01$

SIGNIFICANT FARM INTEREST RESPONSES ON INDIVIDUAL QUESTIONS BY ISSUE AND AREA

First Survey

WATER QUALITY AND PROPER FARMING METHODS

	Percentage			
	Agree	Undecided	Disagree	N
Hilly land near streams should not be used for crops.				
Area 2 - Seward				
Non Farm Interest	32.7	21.0	46.2	238
Farm Interest	26.4	10.7	62.8	140
Total	30.4	17.1	52.3	378
$x^2 = 11.257$ at 2 df	$p < .01$			
The use of insecticides and herbicides should not be limited.				
Area 2 - Seward				
Non Farm Interest	11.7	9.6	78.5	238
Farm Interest	32.8	12.8	54.2	140
Total	19.5	10.8	69.5	378
$x^2 = 28.333$ at 2 df	$p < .001$			
Area 3 - Henderson				
Non Farm Interest	10.6	11.7	77.6	94
Farm Interest	33.0	15.4	51.4	142
Total	24.1	13.9	61.8	236
$x^2 = 18.694$ at 2 df	$p < .001$			
Area 4 - Beatrice				
Non Farm Interest	6.4	27.9	85.5	277
Farm Interest	26.5	12.2	61.2	98
Total	11.7	9.0	79.2	375
$x^2 = 31.649$ at 2 df	$p < .001$			
Conservation practices on farm land should be required by law.				
Area 1 - Friend				
Non Farm Interest	52.7	20.4	26.7	127
Farm Interest	28.3	18.8	52.8	106
Total	41.6	19.7	38.6	233
$x^2 = 18.531$ at 2 df	$p < .001$			

Conservation practices on farm land should be required by law. (Continued)

	Agree	Undecided	Disagree	
Area 2 - Seward				
Non Farm Interest	56.3	20.1	23.5	238
Farm Interest	40.7	12.1	47.1	140
Total	81.9	27.8	52.3	378
$x^2 = 22.769$ at 2 df	$p < .001$			
Area 3 - Henderson				
Non Farm Interest	57.4	15.9	26.5	94
Farm Interest	28.1	20.4	51.4	142
Total	39.8	18.6	41.5	236
$x^2 = 21.162$ at 2 df	$p < .001$			
Area 4 - Beatrice				
Non Farm Interest	53.4	12.9	33.5	277
Farm Interest	38.7	11.2	50.0	98
Total	49.6	12.5	37.8	375
$x^2 = 8.473$ at 2 df	$p < .02$			

POLLUTION ABATEMENT

There has been too much concern over water pollution.

Area 1 - Friend				
Non Farm Interest	14.1	7.8	77.9	127
Farm Interest	31.1	13.2	55.6	106
Total	21.8	10.3	67.8	233
$x^2 = 13.421$ at 2 df	$p < .01$			
Area 2 - Seward				
Non Farm Interest	13.0	5.0	81.9	238
Farm Interest	19.2	13.5	67.1	140
Total	15.3	8.2	76.4	378
$x^2 = 12.593$ at 2 df	$p < .01$			
Area 4 - Beatrice				
Non Farm Interest	16.2	4.3	79.4	277
Farm Interest	32.6	8.1	59.1	98
Total	20.5	5.3	74.1	375
$x^2 = 15.482$ at 2 df	$p < .001$			

	Agree	Undecided	Disagree	N
All feedlot operators should be prohibited from polluting streams.				
Area 2 - Seward				
Non Farm Interest	87.8	5.0	7.1	238
Farm Interest	72.1	9.2	18.5	140
Total	82.0	6.6	11.3	378
x^2 = 15.161 at 2 df	$p < .001$			
Area 3 - Henderson				
Non Farm Interest	87.2	6.3	6.3	94
Farm Interest	70.4	9.8	19.7	142
Total	77.1	8.4	14.4	236
x^2 = 9.860 at 2 df	$p < .01$			
Area 4 - Beatrice				
Non Farm Interest	88.4	4.6	6.8	277
Farm Interest	57.1	8.1	34.6	98
Total	80.2	5.6	14.1	375
x^2 = 50.077 at 2 df	$p < .001$			
Only large feedlot operators should be prohibited from polluting streams.				
Area 3 - Henderson				
Non Farm Interest	14.8	6.3	78.7	94
Farm Interest	46.4	7.0	46.4	142
Total	33.8	6.7	59.3	236
x^2 = 26.594 at 2 df	$p < .001$			
Area 4 - Beatrice				
Non Farm Interest	18.0	4.6	77.2	277
Farm Interest	47.9	4.0	47.9	98
Total	25.8	4.5	69.6	375
x^2 = 34.020 at 2 df	$p < .001$			

TAX SUPPORT FOR POLLUTION ABATEMENT AND CONSERVATION

I would rather have low taxes and low consumer prices than clean rivers.				
Area 1 - Friend				
Non Farm Interest	18.8	14.9	66.1	127
Farm Interest	23.5	32.0	44.3	106
Total	21.0	22.7	56.2	233
x^2 = 12.928 at 2 df	$p < .01$			

I would rather have low taxes and low consumer prices than clean rivers. (Cont)

Area 2 - Seward

	Agree	Undecided	Disagree	N
Non Farm Interest	9.2	18.9	71.8	238
Farm Interest	27.8	23.5	48.5	140
Total	16.1	20.6	63.2	378

$x^2 = 27.407$ at 2 df $p < .001$

RECREATION

We need more lakes and parks for recreation.

Area 2 - Seward

	Agree	Undecided	Disagree	N
Non Farm Interest	49.1	18.0	32.7	238
Farm Interest	43.5	10.0	46.4	140
Total	47.0	15.0	37.8	378

$x^2 = 8.733$ at 2 df $p < .02$

Area 3 - Henderson

	Agree	Undecided	Disagree	N
Non Farm Interest	58.5	15.9	25.5	94
Farm Interest	33.0	17.6	49.2	142
Total	43.2	16.9	39.8	236

$x^2 = 16.560$ at 2 df $p < .001$

Area 4 - Beatrice

	Agree	Undecided	Disagree	N
Non Farm Interest	64.2	12.6	23.1	277
Farm Interest	41.8	11.2	46.9	98
Total	58.4	12.2	29.3	375

$x^2 = 20.368$ at 2 df $p < .001$

Parks should not be included in small watershed projects.

Area 3 - Henderson

	Agree	Undecided	Disagree	N
Non Farm Interest	21.2	36.1	42.5	94
Farm Interest	51.4	26.7	21.8	142
Total	39.4	30.5	30.0	236

$x^2 = 22.745$ at 2 df $p < .001$

Area 4 - Beatrice

	Agree	Undecided	Disagree	N
Non Farm Interest	31.0	22.0	46.9	277
Farm Interest	51.0	11.2	37.7	98
Total	36.2	19.2	44.5	375

$x^2 = 13.727$ at 2 df $p < .01$

SPECIAL DISTRICTS

Organizations for conserving soil and water should be smaller than a whole watershed area.

	Agree	Undecided	Disagree	N
Area 1 - Friend				
Non Farm Interest	24.4	55.9	19.6	127
Farm Interest	41.5	36.7	21.6	106
Total	32.1	47.2	20.6	233
$x^2 = 9.832$ at 2 df	$p < .01$			
Area 2 - Seward				
Non Farm Interest	28.9	48.3	22.6	238
Farm Interest	47.1	32.8	20.0	140
Total	35.7	42.5	21.6	378
$x^2 = 13.373$ at 2 df	$p < .01$			
Area 3 - Henderson				
Non Farm Interest	23.4	62.7	13.8	94
Farm Interest	38.7	37.3	23.9	142
Total	32.6	47.4	19.9	236
$x^2 = 14.692$ at 2 df	$p < .001$			
Area 4 - Beatrice				
Non Farm Interest	25.6	50.5	23.8	277
Farm Interest	33.6	28.5	37.7	98
Total	27.7	44.8	27.4	375
$x^2 = 14.600$ at 2 df	$p < .001$			

IRRIGATION

Reuse of irrigation water should be required by law.

Area 3 - Henderson				
Non Farm Interest	65.9	15.9	18.0	94
Farm Interest	53.5	11.9	34.5	142
Total	58.4	13.5	27.9	236
$x^2 = 7.612$ at 2 df	$p < .05$			

FLOOD CONTROL

Small watershed projects are not a necessary expenditure.

Area 2 - Seward				
Non Farm Interest	15.1	23.5	61.3	238
Farm Interest	17.1	11.4	71.4	140
Total	15.8	19.0	65.0	378
$x^2 = 8.379$ at 2 df	$p < .02$			

	Agree	Undecided	Disagree	N
The City Council should prohibit people from building on flood plains.				
Area 4 - Beatrice				
Non Farm Interest	68.2	14.4	17.3	277
Farm Interest	52.0	19.3	28.5	98
Total	64.0	15.7	20.2	375
$x^2 = 8.605$ at 2 df	$p < .02$			
The clearing of river channels is a waste of time and money.				
Area 1 - Friend				
Non Farm Interest	17.3	16.5	66.1	127
Farm Interest	29.2	23.5	47.1	106
Total	22.7	19.7	57.5	233
$x^2 = 8.680$ at 2 df	$p < .02$			
Area 2 - Seward				
Non Farm Interest	11.7	15.5	72.6	238
Farm Interest	25.0	12.1	62.8	140
Total	16.6	14.2	69.0	378
$x^2 = 11.213$ at 2 df	$p < .01$			
Area 4 - Beatrice				
Non Farm Interest	13.7	16.2	70.0	277
Farm Interest	25.5	14.2	60.2	98
Total	16.8	15.7	67.4	375
$x^2 = 7.205$ at 2 df	$p < .05$			
Large reservoirs should be constructed to protect against flood damage.				
Area 2 - Seward				
Non Farm Interest	72.6	19.3	7.9	238
Farm Interest	59.2	13.5	27.1	140
Total	67.7	17.1	15.0	378
$x^2 = 25.495$ at 2 df	$p < .001$			
Area 3 - Henderson				
Non Farm Interest	79.7	12.7	7.4	94
Farm Interest	60.5	21.1	18.3	142
Total	68.2	17.7	13.9	236
$x^2 = 10.058$ at 2 df	$p < .01$			

Large reservoirs should be constructed to protect against flood damage. (Cont.)

Area 4 - Beatrice

	Agree	Undecided	Disagree	N
Non Farm Interest	80.8	11.9	7.2	277
Farm Interest	65.3	15.3	19.3	98
Total	76.8	12.8	10.4	375
x^2 = 13.238 at 2 df	$p < .01$			

SIGNIFICANT EDUCATION RESPONSES ON INDIVIDUAL QUESTIONS BY ISSUE AND AREA

First Survey

CHLORINATION

Cities should use chlorination to disinfect their water supply.

Area 1 - Friend

	Agree	Undecided	Disagree	N
0 - 8 years	35.1	44.4	20.3	54
9 - 12 years	53.9	31.7	14.2	126
13 + years	64.1	26.4	9.4	53
Total	51.9	33.4	14.5	233
x^2 = 9.593 at 4 df	$p < .05$			

Area 3 - Henderson

	Agree	Undecided	Disagree	N
0 - 8 years	40.3	19.3	40.3	62
9 - 12 years	44.8	35.3	19.8	116
13 + years	60.3	27.5	12.0	58
Total	47.4	29.2	23.3	236
x^2 = 17.917 at 4 df	$p < .01$			

Area 4 - Beatrice

	Agree	Undecided	Disagree	N
0 - 8 years	33.7	16.8	49.4	89
9 - 12 years	55.2	20.[illegible]	23.8	210
13 + years	76.3	11.[illegible]	11.8	76
Total	54.4	18.1	27.4	375
x^2 = 39.821 at 4 df	$p < .001$			

WATER QUALITY AND PROPER FARMING METHODS

The use of insecticides and herbicides should not be limited.

Area 2 - Seward

	Agree	Undecided	Disagree	N
0 - 8 years	21.7	21.7	56.4	101
9 - 12 years	23.3	7.1	69.4	167
13 + years	11.8	6.3	81.8	110
Total	19.5	10.8	69.5	378
x^2 = 24.963 at 4 df	$p < .001$			

	Agree	Undecided	Disagree	N
Conservation practices on farm land should be required by law.				
Area 4 - Beatrice				
0 - 8 years	40.4	14.6	44.9	89
9 - 12 years	48.0	12.8	39.0	210
13 + years	64.4	9.2	26.3	76
Total	49.6	12.5	37.8	375
$x^2 = 9.912$ at 4 df	$p < .05$			
POLLUTION ABATEMENT				
There has been too much concern over water pollution.				
Area 1 - Friend				
0 - 8 years	35.1	12.9	51.8	54
9 - 12 years	19.8	11.9	68.2	126
13 + years	13.2	3.7	83.0	53
Total	21.8	10.3	67.8	233
$x^2 = 13.145$ at 4 df	$p < .01$			
Area 2 - Seward				
0 - 8 years	28.7	18.8	52.4	101
9 - 12 years	12.5	5.3	82.0	167
13 + years	7.2	2.7	90.0	110
Total	15.3	8.2	76.4	378
$x^2 = 47.680$ at 4 df	$p < .001$			
Area 3 - Henderson				
0 - 8 years	32.2	8.0	59.6	62
9 - 12 years	19.8	9.4	70.6	116
13 + years	3.4	12.0	84.4	58
Total	19.0	9.7	71.1	236
$x^2 = 16.220$ at 4 df	$p < .01$			
Area 4 - Beatrice				
0 - 8 years	34.6		65.3	78
9 - 12 years	20.8		79.1	201
13 + years	10.5		89.4	76
Total	21.6		78.3	355
$x^2 = 13.31$ at 2 df	$p < .01$			
All feedlot operators should be prohibited from polluting streams.				
Area 1 - Friend				
0 - 8 years	77.0		22.9	48
9 - 12 years	90.0		10.0	120

	Agree	Undecided	Disagree	N
All feedlot operators should be prohibited from polluting streams. (Cont.)				
13 + years	96.0		3.0	52
Total	88.6		11.3	220
x^2 = 9.48 at 2 df	$p < .01$			
Area 2 - Seward				
0 - 8 years	73.2	11.8	14.8	101
9 - 12 years	82.6	4.1	13.1	167
13 + years	89.0	5.4	5.4	110
Total	82.0	6.6	11.3	378
x^2 = 12.501 at 4 df	$p < .02$			
Area 4 Beatrice				
0 - 8 years	72.8		27.1	81
9 - 12 years	87.0		13.0	200
13 + years	93.1		6.8	73
Total	85.0		14.9	354
x^2 = 13.82 at 2 df	$p < .01$			
Only large feedlot operators should be prohibited from polluting streams.				
Area 2 - Seward				
0 - 8 years	37.6	11.8	50.4	101
9 - 12 years	31.1	3.5	65.2	167
13 + years	18.1	2.7	79.0	110
Total	29.1	5.5	65.3	378
x^2 = 23.871 at 4 df	$p < .001$			
Area 4 - Beatrice				
0 - 8 years	40.9		59.0	83
9 - 12 years	23.7		76.2	202
13 + years	20.5		79.4	73
Total	27.0		72.9	358
x^2 = 10.77 at 2 df	$p < .01$			
TAX SUPPORT FOR POLLUTION ABATEMENT AND CONSERVATION				
I would rather have low taxes and low consumer prices than clean rivers.				
Area 1 - Friend				
0 - 8 years	38.8	20.3	40.7	54
9 - 12 years	19.8	28.5	51.5	126
13 + years	5.6	11.3	83.0	53
Total	21.0	22.7	56.2	233
x^2 = 28.835 at 4 df	$p < .001$			

I would rather have low taxes and low consumer prices than clean rivers. (Cont.)

	Agree	Undecided	Disagree	N
Area 2 - Seward				
0 - 8 years	26.7	30.6	42.5	101
9 - 12 years	14.9	19.1	65.8	167
13 + years	8.1	13.6	78.1	110
Total	16.1	20.6	63.2	378
$x^2 = 30.108$ at 4 df	$p < .001$			
Area 3 - Henderson				
0 - 8 years	40.3	19.3	40.3	62
9 - 12 years	22.4	21.5	56.0	116
13 + years	6.8	17.2	75.8	58
Total	23.3	19.9	56.7	236
$x^2 = 21.506$ at 4 df	$p < .001$			
Area 4 - Beatrice				
0 - 8 years	29.2	20.2	50.5	89
9 - 12 years	15.7	14.7	69.5	210
13 + years	13.1	17.1	69.7	76
Total	18.4	16.5	65.0	375
$x^2 = 12.535$ at 4 df	$p < .02$			

RECREATION

We need more lakes and parks for recreation

Area 4 - Beatrice				
0 - 8 years	34.8	13.4	51.6	89
9 - 12 years	62.8	12.8	24.2	210
13 + years	73.6	9.2	17.1	76
Total	58.4	12.2	29.3	375
$x^2 = 33.822$ at 4 df	$p < .001$			

Parks should not be included in small watershed projects.

Area 2 - Seward				
0 - 8 years	34.6	29.7	35.6	101
9 - 12 years	33.5	22.1	44.3	167
13 + years	19.0	22.7	58.1	110
Total	29.6	24.3	46.0	378
$x^2 = 13.483$ at 4 df	$p < .01$			

SPECIAL DISTRICTS

Organizations for conserving soil and water should be smaller than a whole watershed area.

	Agree	Undecided	Disagree	N
Area 1 - Friend				
0 - 8 years	27.7	61.1	11.1	54
9 - 12 years	37.3	42.0	20.6	126
13 + years	24.5	45.2	30.1	53
Total	32.1	47.2	20.6	233

$x^2 = 10.000$ at 4 df $p < .05$

IRRIGATION

Irrigators should be able to use an unlimited amount of ground water.

	Agree	Undecided	Disagree	N
Area 2 - Seward				
0 - 8 years	43.5	4.9	51.4	101
9 - 12 years	25.1	12.5	62.2	167
13 + years	13.6	7.2	79.0	110
Total	26.7	8.9	64.2	378

$x^2 = 28.935$ at 4 df $p < .001$

	Agree	Undecided	Disagree	N
Area 4 - Beatrice				
0 - 8 years	38.2	11.2	50.5	89
9 - 12 years	23.3	8.5	68.0	210
13 + years	9.2	13.1	77.6	76
Total	24.0	10.1	65.8	375

$x^2 = 20.664$ at 4 df $p < .001$

FLOOD CONTROL

Small watershed projects are not a necessary expenditure.

	Agree	Undecided	Disagree	N
Area 1 - Friend				
0 - 8 years	31.4	27.7	40.7	54
9 - 12 years	19.0	24.6	56.3	126
13 + years	16.9	11.3	71.6	53
Total	21.4	22.3	56.2	233

$x^2 = 11.812$ at 4 df $p < .02$

	Agree	Undecided	Disagree	N
Area 2 - Seward				
0 - 8 years	20.7	27.7	51.4	101
9 - 12 years	15.5	16.7	67.6	167
13 + years	11.8	14.5	73.6	110
Total	15.8	19.0	65.0	378

$x^2 = 12.583$ at 4 df $p < .02$

The clearing of river channels is a waste of time and money.

	Agree	Undecided	Disagree	N
Area 1 - Friend				
0 - 8 years	35.1	14.8	50.0	54
9 - 12 years	20.6	23.8	55.5	126
13 + years	15.0	15.0	69.8	53
Total	22.7	19.7	57.5	53
x^2 = 9.591 at 4 df	$p < .05$			
Area 2 - Seward				
0 - 8 years	33.6	14.8	51.4	101
9 - 12 years	11.3	12.5	76.0	167
13 + years	9.0	16.3	74.5	110
Total	16.6	14.2	69.0	378
x^2 = 30.973 at 4 df	$p < .001$			

Large reservoirs should be constructed to protect against flood damage.

Area 4 - Beatrice				
0 - 8 years	61.7	20.2	17.9	89
9 - 12 years	81.4	10.4	8.0	210
13 + years	81.5	10.5	7.8	76
Total	76.8	12.8	10.4	375
x^2 = 14.890 at 4 df	$p < .01$			

SIGNIFICANT AGE RESPONSES ON INDIVIDUAL QUESTIONS BY ISSUE AND AREA

First Survey

CHLORINATION

Cities should use chlorination to disinfect their water supply

Area 3 - Henderson				
20 - 35 years	55.6	26.1	18.1	88
36 - 55 years	50.7	33.8	15.4	71
56 + years	34.2	28.9	36.8	76
Total	47.2	29.3	23.4	235
x^2 = 13.820 at 4 df	$p < .01$			
Area 4 - Beatrice				
20 - 35 years	61.3	18.9	19.6	132
36 - 55 years	64.5	19.0	16.3	110
56 + years	38.4	17.6	44.0	125
Total	54.4	18.5	26.9	367
x^2 = 29.827 at 4 df	$p < .001$			

POLLUTION ABATEMENT

	Agree	Undecided	Disagree	N
There has been too much concern over water pollution.				
Area 1 - Friend				
20 - 35 years	15.1	5.8	79.0	86
36 - 55 years	16.9	10.1	72.8	59
56 + years	32.5	15.1	52.3	86
Total	22.0	10.3	67.5	231
x^2 = 15.344 at 4 df	$p < .01$			
Area 2 - Seward				
20 - 35 years	12.8	6.4	80.7	203
36 - 55 years	13.0	4.7	82.1	84
56 + years	24.1	16.0	59.7	87
Total	15.5	8.2	76.2	374
x^2 = 18.001 at 4 df	$p < .01$			
Area 3 - Henderson				
20 - 35 years	11.3	6.8	81.8	88
36 - 55 years	11.2	9.8	78.8	71
56 + years	35.5	13.1	51.3	76
Total	19.1	9.7	71.0	235
x^2 = 23.621 at 4 df	$p < .001$			
Area 4 - Beatrice				
20 - 35 years	15.9	3.0	81.0	132
36 - 55 years	10.9	6.3	82.7	110
56 + years	35.2	7.2	57.6	125
Total	20.9	5.4	73.5	367
x^2 = 27.865 at 4 df	$p < .001$			

TAX SUPPORT FOR POLLUTION ABATEMENT AND CONSERVATION

	Agree	Undecided	Disagree	N
I would rather have low taxes and low consumer prices than clean rivers.				
Area 1 - Friend				
20 - 35 years	9.3	23.2	67.4	86
36 - 55 years	11.8	30.5	57.6	59
56 + years	38.3	17.4	44.1	86
Total	20.7	22.9	56.2	231
x^2 = 27.285 at 4 df	$p < .001$			

	Agree	Undecided	Disagree	N
I would rather have low taxes and low consumer prices than clean rivers.(Cont.)				
Area 3 - Henderson				
20 - 35 years	18.1	22.7	59.0	88
36 - 55 years	14.0	21.1	64.7	71
56 + years	36.8	15.7	47.3	76
Total	22.9	20.0	57.0	235
$x^2 = 12.787$ at 4 df	$p < .02$			
Area 4 - Beatrice				
20 - 35 years	12.8	15.1	71.9	132
36 - 55 years	15.4	16.3	68.1	110
56 + years	27.2	19.2	53.6	125
Total	18.5	16.8	64.5	367
$x^2 = 12.227$ at 4 df	$p < .02$			

RECREATION

	Agree	Undecided	Disagree	N
We need more lakes and parks for recreation				
Area 4 - Beatrice				
20 - 35 years	68.1	13.6	18.1	132
36 - 55 years	70.9	12.7	16.3	110
56 + years	35.2	11.2	53.6	125
Total	57.7	12.5	29.1	367
$x^2 = 53.620$ at 4 df	$p < .001$			
Parks should not be included in small watershed projects.				
Area 2 - Seward				
20 - 35 years	25.6	26.6	47.7	203
36 - 55 years	25.0	17.8	57.1	84
56 + years	43.6	26.4	29.8	87
Total	29.6	24.5	45.7	374
$x^2 = 16.853$ at 4 df	$p < .01$			
Area 4 - Beatrice				
20 - 35 years	21.2	24.2	54.5	132
36 - 55 years	38.1	14.5	47.2	110
56 + years	51.2	19.2	29.6	125
Total	36.5	19.6	43.8	367
$x^2 = 28.346$ at 4 df	$p < .001$			

SPECIAL DISTRICTS

Organizations for conserving soil and water should be smaller than a whole watershed area.

Area 2 - Seward

	Agree	Undecided	Disagree	N
20 - 35 years	29.0	44.8	26.1	203
36 - 55 years	47.6	29.7	22.6	84
56 + years	39.0	50.5	10.3	87
Total	35.5	42.7	21.6	374

x^2 = 17.942 at 4 df p < .01

IRRIGATION

Irrigators should be able to use an unlimited amount of ground water.

Area 2 - Seward

	Agree	Undecided	Disagree	N
20 - 35 years	22.6	13.3	64.0	203
36 - 55 years	27.3	2.3	70.2	84
56 + years	35.6	5.7	58.6	87
Total	26.7	9.0	64.1	374

x^2 = 13.936 at 4 df p < .01

Area 4 - Beatrice

	Agree	Undecided	Disagree	N
20 - 35 years	20.4	12.8	66.6	132
36 - 55 years	17.2	8.1	74.5	110
56 + years	34.4	8.8	56.8	125
Total	24.2	10.0	65.6	367

x^2 = 12.761 at 4 df p < .02

FLOOD CONTROL

Small watershed projects are not a necessary expenditure.

Area 1 - Friend

	Agree	Undecided	Disagree	N
20 - 35 years	17.4	23.0	60.4	86
36 - 55 years	11.8	20.3	67.7	59
56 + years	32.5	24.4	43.0	86
Total	21.6	22.5	55.8	231

x^2 = 12.680 at 4 df p < .02

Area 2 - Seward

	Agree	Undecided	Disagree	N
20 - 35 years	13.3	17.7	68.9	203
36 - 55 years	11.9	11.9	76.1	84
56 + years	25.2	28.7	45.9	87
Total	15.7	18.9	65.2	374

x^2 = 20.242 at 4 df p < .001

	Agree	Undecided	Disagree	N

The clearing of river channels is a waste of time and money.

Area 1 - Friend

20 - 35 years	13.9	22.0	63.9	86
36 - 55 years	18.6	27.1	54.2	59
56 + years	34.8	10.4	54.6	86
Total	22.9	19.0	58.0	231
x^2 = 15.446 at 4 df	$p < .01$			

Area 2 - Seward

20 - 35 years	11.8	15.2	72.9	203
36 - 55 years	16.6	10.7	72.6	84
56 + years	28.7	14.9	56.3	87
Total	16.8	14.1	68.9	374
x^2 = 13.897 at 4 df	$p < .01$			

SIGNIFICANT INCOME RESPONSES ON INDIVIDUAL QUESTIONS BY ISSUE AND AREA

First Survey

CHLORINATION

Cities should use chlorination to disinfect their water supply.

Area 4 - Beatrice

\$0 - 5,000	36.6	18.7	44.6	112
\$5,001 - 10,000	59.2	17.1	23.6	152
\$10,001 - 15,000	71.2	15.0	13.6	73
\$15,001 -	72.7	13.6	13.6	22
Total	55.4	16.9	27.5	359
x^2 = 31.849 at 6 df	$p < .001$			

WATER QUALITY AND PROPER FARMING METHODS

Hilly land near streams should not be used for crops.

Area 2 - Seward

\$0 - 5,000	29.4	27.4	43.1	102
\$5,001 - 10,000	28.4	15.2	56.2	151
\$10,001 - 15,000	31.4	8.5	60.0	70
\$15,000 -	33.3	13.3	53.3	30
Total	29.7	17.2	52.9	353
x^2 = 12.927 at 6 df	$p < .05$			

	Agree	Undecided	Disagree	N
POLLUTION ABATEMENT				
There has been too much concern over water pollution.				
Area 2 - Seward				
$0 - 5,000	25.4	12.7	61.7	102
$5,001 - 10,000	13.2	3.3	83.4	151
$10,001 - 15,000	7.1	8.5	84.2	70
$15,001 -	10.0	10.0	80.0	30
Total	15.2	7.6	77.0	353
x^2 = 22.812 at 6 df	$p < .001$			
TAX SUPPORT FOR POLLUTION ABATEMENT AND CONSERVATION				
I would rather have low taxes and low consumer prices than clean rivers.				
Area 1 - Friend				
$0 - 5,000	31.5	16.8	51.5	95
$5,001 - 10,000	15.7	33.7	50.5	89
$10,001 - 15,000	10.3	10.3	79.3	29
$15,001 -	12.5	18.7	68.7	16
Total	21.3	22.7	55.8	229
x^2 = 20.517 at 6 df	$p < .01$			
Area 2 - Seward				
$0 - 5,000	27.4	22.5	50.0	102
$5,001 - 10,000	13.9	17.8	68.2	151
$10,001 - 15,000	12.8	18.5	68.5	70
$15,001 -	6.6	13.3	80.0	30
Total	16.9	18.9	64.0	353
x^2 = 16.255 at 6 df	$p < .02$			
Area 4 - Beatrice				
$0 - 5,000	29.4	18.7	51.7	112
$5,001 - 10,000	17.1	12.5	70.3	152
$10,001 - 15,000	9.5	19.1	71.2	73
$15,001 -	0.0	18.1	81.8	22
Total	18.3	16.1	65.4	359
x^2 = 21.958 at 6 df	$p < .01$			
RECREATION				
We need more lakes and parks for recreation.				
$0 - 5,000	42.8	15.1	41.9	112
$5,001 - 10,000	67.1	9.8	23.0	152
$10,001 - 15,000	64.3	12.3	23.2	73

	Agree	Undecided	Disagree	N
We need more lakes and parks for recreation. (Continued)				
$15,001 -	72.7	4.5	22.7	22
Total	59.3	11.6	28.9	359
x^2 = 19.723 at 6 df	$p < .01$			
Parks should not be included in small watershed projects.				
Area 1 - Friend				
$0 - 5,000	36.8	33.6	29.4	95
$5,001 - 10,000	35.9	28.0	35.9	89
$10,001 - 15,000	17.2	17.2	65.5	29
$15,001 -	12.5	25.0	62.5	16
Total	32.3	28.8	38.8	229
x^2 = 17.126 at 6 df	$p < .01$			
Area 2 - Seward				
$0 - 5,000	37.2	32.3	30.3	102
$5,001 - 10,000	27.1	22.5	50.3	151
$10,001 - 15,000	27.1	18.5	54.2	70
$15,001 -	20.0	23.3	56.6	30
Total	24.4	24.6	45.8	353
x^2 = 15.042 at 6 df	$p < .02$			

SPECIAL DISTRICTS

	Agree	Undecided	Disagree	N
Organizations for conserving soil and water should be smaller than a whole watershed area.				
Area 2 - Seward				
$0 - 5,000	30.3	54.9	14.7	102
$5,001 - 10,000	33.1	39.0	27.8	151
$10,001 - 15,000	34.2	40.0	25.7	70
$15,001 -	50.0	40.0	10.0	30
Total	33.9	43.9	22.0	353
x^2 = 13.802 at 6 df	$p < .05$			
Area 3 - Henderson				
$0 - 5,000	30.0	61.6	8.3	60
$5,001 - 10,000	28.2	47.0	24.7	85
$10,001 - 15,000	41.3	34.7	23.9	46
$15,001 -	41.1	35.2	23.5	34
Total	33.3	46.6	20.0	225
x^2 = 13.185 at 6 df	$p < .05$			

	Agree	Undecided	Disagree	N
Organizations for conserving soil and water should be smaller than a whole watershed area. (Continued)				
Area 4 - Beatrice				
$0 - 5,000	37.5	46.5	16.0	112
$5,001 - 10,000	23.6	43.4	32.8	152
$10,001 - 15,000	20.5	49.3	30.1	73
$15,001 -	22.7	40.9	36.3	22
Total	27.2	45.4	27.2	359
$x^2 = 14.678$ at 6 df	$p < .05$			
IRRIGATION				
Irrigators should be able to use an unlimited amount of ground water.				
Area 4 - Beatrice				
$0 - 5,000	37.5	8.9	53.5	112
$5,001 - 10,000	21.0	13.1	65.7	152
$10,001 - 15,000	20.5	6.8	72.6	73
$15,001 -	4.5	4.5	90.9	22
Total	25.0	10.0	64.9	359
$x^2 = 20.381$ at 6 df	$p < .01$			
FLOOD CONTROL				
Small watershed projects are not a necessary expenditure.				
Area 1 - Friend				
$0 - 5,000	32.6	21.0	46.3	95
$5,001 - 10,000	14.6	29.2	56.1	89
$10,001 - 15,000	10.3	20.6	68.9	29
$15,001 -	18.7	0.0	81.2	16
Total	21.8	22.7	55.4	229
$x^2 = 18.796$ at 5 df	$p < .01$			
Area 2 - Seward				
$0 - 5,000	26.4	30.3	43.1	102
$5,001 - 10,000	7.9	17.2	74.8	151
$10,001 - 15,000	14.2	12.8	72.8	70
$15,001 -	20.0	6.6	73.3	30
Total	15.5	19.2	65.1	353
$x^2 = 35.416$ at 6 df	$p < .001$			
Area 4 - Beatrice				
$0 - 5,000	28.5	27.6	43.7	112
$5,001 - 10,000	11.8	15.1	73.0	152

	Agree	Undecided	Disagree	N
Small watershed projects are not a necessary expenditure. (Continued)				
$10,001 - 15,000	12.3	16.4	71.2	73
$15,001 -	13.6	9.0	77.2	22
Total	17.2	18.9	63.7	359
x^2 = 29.468 at 6 df	$p < .001$			
The city council should prohibit people from building on flood plains.				
Area 1 - Friend				
$0 - 5,000	75.7	14.7	9.4	95
$5,001 - 10,000	59.5	15.7	24.7	89
$10,001 - 15,000	55.1	31.0	13.7	29
$15,001 -	68.7	12.5	18.7	16
Total	66.3	17.0	16.5	229
x^2 = 12.994 at 6 df	$p < .05$			
The clearing of river channels is a waste of time and money.				
Area 2 - Seward				
$0 - 5,000	24.5	18.6	56.8	102
$5,001 - 10,000	11.2	10.5	78.1	151
$10,001 - 15,000	10.0	18.5	71.4	70
$15,001 -	20.0	3.3	76.6	30
Total	15.5	13.8	70.5	353
x^2 = 19.259 at 6 df	$p < .01$			

SIGNIFICANT OWN-RENT RESPONSES ON INDIVIDUAL QUESTIONS BY ISSUE AND AREA

First Survey

CHLORINATION

Cities should use chlorination to disinfect their water supply.

Area 3 - Henderson

Own	41.9	31.6	26.4	193
Rent	75.0	17.5	7.5	40
Total	47.6	29.1	23.1	233
x^2 = 14.967 at 2 df	$p < .001$			

	Agree	Undecided	Disagree	N
WATER QUALITY AND PROPER FARMING METHODS				
Conservation practices on farm land should be required by law.				
Area 2 - Seward				
Own	46.5	18.1	35.3	286
Rent.	63.6	13.1	22.7	88
Total	50.5	17.1	32.3	374
x^2 = 8.016 at 2 df	p < .02			
Area 4 - Beatrice				
Own	47.5	10.9	41.5	284
Rent	55.8	18.6	25.5	86
Total	49.4	12.7	37.8	370
x^2 = 8.435 at 2 df	p < .02			
RECREATION				
We need more lakes and parks for recreation.				
Area 4 - Beatrice				
Own	55.6	11.6	32.7	285
Rent	66.2	15.1	18.6	86
Total	58.1	12.4	29.4	370
x^2 = 6.417 at 2 df	p < .05			
FLOOD CONTROL				
The clearing of river channels is a waste of time and money.				
Area 1 - Friend				
Own	26.9	19.1	53.9	178
Rent	7.6	21.1	71.1	52
Total	22.6	19.5	57.8	230
x^2 = 8.763 at 2 df	p < .02			

Agree Undecided Disagree N

SIGNIFICANT NON-IRRIGATING - IRRIGATING RESPONSES ON INDIVIDUAL QUESTIONS BY ISSUE AND AREA

First Survey

IRRIGATION

Reuse of irrigation water should be required by law.

Area 3 - Henderson

Farmers

Dryland	52.9	29.4	17.6	17
Irrigators	53.6	9.6	36.8	125
Total	53.5	11.9	34.5	142

$x^2 = 6.498$ at 2 df $p < .05$

SIGNIFICANT GROUND WATER IRRIGATORS-NON-IRRIGATORS ON QUESTIONS BY ISSUE & AREA

First Survey

IRRIGATION

Irrigators should be able to use an unlimited amount of ground water.

Area 1 - Friend

Farmers

Groundwater Irrigators	39.2	9.8	50.9	51
Non-Irrigators	12.2	10.2	77.5	49
Total	26.0	10.0	64.0	100

$x^2 = 9.752$ at 2 df $p < .01$

SIGNIFICANT NON-FEEDER - FEEDER RESPONSE ON QUESTIONS BY ISSUE AND AREA

First Survey

POLLUTION ABATEMENT

All feedlot operators should be prohibited from polluting streams.

Area 2 - Seward

Farmers

Non-Feeder	81.4	11.1	7.4	54
Feeder	66.2	8.1	25.5	86
Total	72.1	9.2	18.5	140

$x^2 = 7.277$ at 2 df $p < .05$

Only large feedlot operators should be prohibited from polluting streams.

Area 3 - Henderson

Farmers

	Agree	Undecided	Disagree	N
Non-Feeder	33.8	10.2	55.8	68
Feeder	58.1	4.0	37.8	74
Total	46.4	7.0	46.4	142

$x^2 = 8.938$ at 2 df $p < .02$

APPENDIX V

This appendix contains a series of ten news stories featured in the Henderson News and the Beatrice Sun.

Note to editors:

This series contains 10 parts. They are:

1. The Big Blue - Evil-doer or Saint?
2. The Basin Plan - A Brief Explanation.
3. Surface Water Irrigation - Now and the Future.
4. Ground Water Reserves - One Man's View.
5. Pollution Problems - An Overview.
6. Trickles and Torrents - One Man's View of Flooding.
7. Not By A Damn Sight - The Beaver Crossing Project.
8. Recreation - What's the Potential?
9. The Bureau and the Corps - What They Do And Why.
10. Healers at Work.

Note to editors:

The following sources were consulted in preparing this series.

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"The Federal Lands: Their Use and Management", by Marion Clawson and Burnell Held

DOCUMENTS

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Report on The Frameworks Study, Nebraska Soil and Water Conservation Commission, State Water Plan, Publication No. 101
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Economic Impact of Reservoir Recreation, U.S. Department of Interior
Blue Division, Nebraska-Kansas Reconnaissance Report, 1965
Unpublished Feasibility Report, Missouri River Basin Project, "Beaver Crossing Dam & Reservoir"

BOOKLETS AND PAMPHLETS

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A Decade of Achievement, Salt Valley Watershed District
Gage County Soil and Water Conservation District Program, August 1964
Gage County Soil and Water Conservation District Annual Report, 1970
Watershed Development, NU Extension Service
Tackling the Economic Puzzle, Vision 17
Concerted Services in Training and Education in Small Towns and Rural Areas, seven cooperating federal agencies
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Rural Environmental Assistance Program, Saline County, ASCS, 1971
Introduction to Flood Proofing, Center for Urban Studies, University of Chicago

NEWSPAPERS

Beatrice Sun
Lincoln Evening Journal
Seward County Independent

INTERVIEWS

Allington, Duane	Wymore: interim chairman Big Blue River Basin Natural Resources Board Gage County Soil and Water Conservation District
Behrens, Norman	Crete
Bening, Col. Robert G.	District Engineer, Kansas City
Child, James	Vision 17
Doel, John R.	Henderson
Gard, Mrs. Ruth	Beaver Crossing land owner
Kirk, Glen	Chief of Bureau of Reclamation Kansas River Projects Planning Division
MacLean, Chuck	Soil Conservation Service technician
Rochester, Lowell	Crete, Interim President, Citizens for Water Management
Rossiter, Virgil	DeWitt
Sheffield, Les	Nebraska Irrigation Coordinator
Stauffer, Uriah	Beaver Crossing
Teser, Mrs. Louis	Beaver Crossing land owner
Vitosch, Lawrence	O'Dell, member Gage County Soil and Water Conservation District
Williamson, Dayle E.	Executive Secretary Nebraska Soil and Water Conservation Commission

(Note: Telephone interviews for data, clarification with state and federal officials.)

Special to the Beatrice Sun and Henderson News

(Editor's Note: This series is part of a research program being conducted by Doane College under a grant from the Office of Water Resources Research, U.S. Department of Interior. It's called "Measuring and Developing Methods of Attitude and Motivational Change in Implementing the Big Blue River Basin Water Plan.")

By Charles Hein
Doane College

The Cessna 120 droned up river. Norman Behrens, 44, of Crete, confirmed river-watcher since his days in knee pants, was making yet another sortie over the Big Blue River Basin.

He's done it many times, from Tuttle Creek Reservoir in Kansas, over Beatrice where the Big Blue unfolds in snake-like twists and turns, over Crete, Seward and on to where Kezar Creek meets the north fork of the Big Blue south of David City.

It's seldom pleasant.

The picture directly below Behrens' Cessna and on to where the valley pushes against the horizon contains some 2½ million acres of this country's finest crop land.

It is crop land in trouble, and the Big Blue is the evil-doer.

But if it is evil-doer, it is also saint, and it would be paradoxical if it couldn't be explained. It can.

Some 35 times since 1900 floods have swept over the valley. The 20 communities dotting the banks of the Big Blue have lost some $5.3 million in damages from floods in the last 25 years alone.

In the uplands where water turns stagnant under the prairie sun because it ponds up rather than drains, crop losses occur on 110,000 acres.

In the lowlands torrents of chocolate-like water send damages into the millions on 242,000 acres. Prime cropland lies nude, its top soil at the bottom of Tuttle Creek Reservoir.

But water also pumps life into the economy. It is the patron saint of the basin's 108,000 residents. Without - surface water and ground water - the agricultural base which supports the population, one-third of whom live in communities of less than 2,500, would be a wasteland akin to what some ancient wag derisively termed "The Great American Desert".

Now the river is a neglected resource. It is silted in, polluted with the trappings of man's presence, clogged with debris. Much of the water escapes, rolling off cropland, never to be used, reused or recovered for those who need it most - people.

What's happened and what can be done about it?

Behrens suggests answers. Raised within 2½ blocks of the river, he has haunted its banks, fished its depths and photographed its nuances. "From the standpoint of conservation," he said, "this is probably the most neglected river in the country." But, he adds optimistically, "We've got just as much chance with our river as anyone."

Years ago, he said, people used the river for fuel. Trees were cut for kindling. "Man trying to keep warm kept the river clean," but now it is "nothing but a woodpile."

And an ancient system of dams did its part. "At one time this was the most dammed river in the country," he said. "It was common between Beatrice and Crete to have a dam every five miles."

Dams were built for water power and the ponds that formed behind them for something else needed by man - ice.

Before man arrived, the Big Blue was literally just that - blue. Its gravel bottom kept the water clear. But the silt which settled behind the dams and ran unchecked from the farms changed all that.

Slowly, ever so slowly, says Behrens, the river bottom is clearing. The old dams are gone. Modern conservation practices, planned attempts at flood control, and the emphasis on a healthy environment are turning the tide.

But it's not all that simple, he observes. Floods remain a threat. The old settling ponds are gone, silted in, and man has cut holes around remaining dams. Each time water spills out of the banks more silt is dropped and the mile-wide Blue Basin gets shallower.

"The big pools that held water aren't there which indicates the water level at flood time is going to be higher," he said. He concedes not everyone agrees. Others contend that a deeper channel and absence of dams will allow water to run off faster. Behrens contends highway bridges, railroad trestles and other land features counter the argument. He pulls out flood photographs to make his point.

Behrens, who saw "kids catch carp in front of City Hall in Crete," hopes he never does again. But he believes the threat of a major flood is real. It is a concern shared by governmental agencies and people who live along the banks and occupy the towns.

It's not only silt, debris and man's abuse that causes Behrens' alarm. It's the lay of the land. He observes that the land and tributaries west of the Big Blue drop at 5.2 feet per mile toward the river. But the Big Blue dissects relatively level land which drops at only 2.8 feet per mile on the way to Kansas. Behrens says "it's like putting a firehose in a bucket and putting a pin hole in the bottom to let it run out." The river can't handle it.

Behrens sees solutions. They are shared by many. "We've got to hold land and water on the farms." He recommends farm ponds, reservoirs, detention structures on the tributaries, channel improvements, extensive soil and water conservation as vital. There are others.

Behrens is not the only person who wants the river restored, flooding controlled, recreational potential realized and the river's economic impact on agriculture maximized in terms of irrigation and water storage.

The U.S. Army Corps of Engineers, Vision 17, officers of the Natural Resource District, members of the Nebraska Soil and Water Conservation Commission, Watershed District boards, Soil Conservation Districts, the Citizens for Water Management in the Big Blue Basin, a citizen here and businessman there, all realize that water is crucial to the future.

There is one school of thought at least which contends that the answers are already evident. They are contained inside something that weighs 1 pound 2 ounces and runs to 103 pages. It is called "State Water Plan Publication Number 201, Big Blue River Basin."

(Next: The Basin Plan, a brief explanation.)

Special to the Beatrice Sun and Henderson News, 2/8/72

(Editor's Note: This is the second in a series, part of a research program proposed by Doane College on the Big Blue River Basin Water Plan.)

By Charles Hein
Doane College

"Water, water everywhere and not a drop to drink." That's an old familiar saw, but it's not true in the Big Blue River Basin.

There is water, lots of it, for drinking, irrigation, city and industrial use, for recreation.

Will there always be enough?

Maybe, just maybe. It depends on how wisely man uses it.

Questions of "enough" and "how to use it wisely" were the compelling reasons behind "State Water Plan Publication No. 201, Big Blue River Basin," issued by the Nebraska Soil and Water Conservation Commission (NSWCC) in 1968.

But birth of the baby didn't guarantee growth to maturity. It might have died aborning. With little fanfare to accompany the plans' birth, the basin public largely shrugged its collective shoulders.

There were the usual news stories, distribution of a 23-page illustrated, condensed version of the plan, and meetings conducted by the Extension Service in York, Seward and Beatrice. There were other sparsely attended meetings, small talk and not much else.

Basin recommendations have not been implemented. Dayle E. Williamson, executive secretary of the NSWCC, says as far as he knows the only reason why is that "many things in it were just suggestions to residents of what could happen in their basin and facts to inform and get them enthusiastic."

The NSWCC began the original Blue Basin plan in 1962, the first basin plan in the state. Now there are 13. The 1968 Big Blue River Basin Plan is one of them.

But, says Williamson, "While developing the 1968 plan we found it was almost impossible to do a basin plan without a statewide plan for water. Some things in the basin plan require answers from an overall state plan, such as a suggestion that water may need to be imported."

The suggestion didn't fall on deaf ears. On January 18, 1967, 19 state senators put their names on a resolution beginning, "Where as the water supplies of Nebraska are not so located or of such a quantity to satisfy all present and future needs" ... and ending by directing the NSWCC to "analyze the soil and water resources of the state and prepare a comprehensive water and related land plan for the State of Nebraska to be completed no later than June 30, 1971 and to be known as the State Water Plan."

The "Framework Study," the handle put on it by the Unicameral, is out. With respect to the Big Blue Basin it recapitulates the study of 1968.

In spite of the oomph put behind it by water resource activists and the Unicameral, the plan failed to stimulate widespread interest among men on the street. Few people not active in soil and watershed districts were aware of its recommendations.

But the baby is still alive, albeit feeble, and interviews with basin residents from Henderson to the state's southern boundary leave the impression that the basin plan is still a viable answer to the water problems.

The NSWCC prepared the 1968 basin plan for the Big Blue Watershed Planning Board headed by David City's Henry Klosterman. It had technical input from three federal departments and 17 state agencies.

It cited as primary basin needs:

--- Flood control in the lower reaches of the stream;
--- Erosion control throughout the basin;
--- Stabilization of the ground water table in the upper and central basin;
--- Drainage of certain depressions in the upper and central basin;
--- Stabilization of the economy;
--- Provision of more recreational opportunity, especially water-related types.

Basin resources and needs were laid out in detail. The plan included a request to NSWCC, the Corps of Engineers and Bureau of Reclamation to study the potential of four major reservoirs in the basin.

Locations, proposed size and purposes to be served by them were:
Surprise Dam and Reservoir--A mile and a half west of Surprise on

Highway 292 to intercept water from 337 square miles; storage capacity of 176,000 acre feet; to augment low flows into the Big Blue River and to provide for recreation and flood control.

Shestak Dam and Reservoir--Six miles southeast of Dorchester, the impoundment would store 180,500 acre feet of water, control water draining from 415 square miles, provide for flood control, recreation and storage for future surface water irrigation.

Seward View Dam and Reservoir--Two miles west of Seward on U.S. 23; storage for 227,300 acre feet; would control water from 445 square mile area, control flooding, provide for recreation and store water for irrigation use later.

Beaver Crossing Dam and Reservoir--Near Beaver Crossing and I-80, 75 miles west of Omaha and 30 west of Lincoln, this, the largest of the four, would drain an area of 1,154 square miles, store 538,000 acre feet of water, provide for flood control, recreation and storage for irrigation.

That's the basin plan in a nutshell. What do people say about it? Listen to Lawrence Vitosch, newly-elected member of the Gage County Soil and Water Conservation District board, who farms near O'Dell.

"Had I not been on this board I suppose I wouldn't know anything about this. Some fellow on the State Department of Resources really did a good job of explaining it at a meeting in April, but few people from here attended, though it was in Beatrice."

Why?

"It's too remote from them" he says. "It has to mean something to their own lives. It's like this: People think 'Why should we be interested in New York smog?' We're living in a time when there are just too many things to do and we cannot be interested in everything."

Vitosch is interested in the plan and it's got his endorsement. Norman Behrens of Crete, who just now is taking his seat on the Blue River Basin Watershed Board, sees the basin plan as operable. Behrens suggests "people are reluctant to change. They resent being told what to do so we have to plant the seed."

Duane Allington, chairman of the Gage County Soil and Water Conservation District, is a believer too, but he's not betting his bottom dollar that it will come to pass.

"The people of the Big Blue River Basin have been discouraged," he says. "My father before me worked on getting this problem (water) under control. There have been studies around since the 1920's. This year the Corps of Engineers told us we need to form an organization to get people informed about it. We have--but we're no farther along than we ever were."

Meantime, words, concern and studies pile up. The end isn't in sight.

Says the NSWCC's Williamson: "I have the feeling that sometime there will need to be a more detailed plan than we have in the Big Blue Basin right now."

(Next: Surface Water Irrigation, Now and the Future)

Special to the Beatrice Sun and Henderson News

(Editor's Note: This is the third in a series prepared by Doane College on the Big Blue River Basin Water Plan.)

By Charles Hein
Doane College

Basin residents are running hard to escape a piece of their history--the one-industry economy.

They've been at it since the onslaught of grasshoppers, drouth and The Great Depression. The race isn't over and some people will tell you that the old demon of the '30's--lack of economic diversification--has the Big Blue River Basin in a vise-like grip.

But there is one big, big difference.

Irrigation.

Agriculture today provides a more dependable economic base than formerly, where irrigation is used.

Consider what's happened.

Between 1860-1890, basin population surged from nowhere to 140,450 people. That's where it peaked. Since, nearly 32,000 have gone. The evidence is on the main streets of shrinking basin towns with vacant buildings, fewer jobs, fewer young people.

Twelve years ago the census showed 108,000 people living in the basin. More than 33 percent lived in the urban areas of Aurora, Beatrice, Crete, Hastings, Seward and York. Another 32 percent lived on farms and 35 percent in rural non-farm areas or towns under 2,500 people.

The point?

The basin followed the state's farm loss population pattern but failed to keep step with state-wide gains in urban growth and non-agricultural employment. Between 1950-1960 the entire basin gained only 282 non-agricultural employees. It lost 4,772 on the agricultural side, a convincing demonstration of the woes of a one-industry economy.

Nature prompts basin residents to run even faster to escape the past. Statistics show 1955-56 were the two driest years ever recorded in Nebraska, drier even than the drouth of the '30's.

Right after that construction of irrigation wells picked up. Recent statistics show about a third of basin farmland is irrigated, most of that in Hamilton, York, Seward, Butler and Polk counties. More is coming.

Irrigation is a prosperity builder. It makes cash registers jingle and bank assets soar in flood-free areas where it's used extensively. Today agriculture is the hub of the basin's economic wheel--prosperity wheel for implement and feed dealers, the dentists, beauty operators, store owners, and sales clerks...all the townsmen of an agricultural trade center.

Les Sheffield, Nebraska Irrigation Coordinator, can cite, book, chapter and verse on the economic impact of irrigation. The book he cites is a detailed report compiled by Dr. Theodore Roesler, based on 1963 data, for the Nebraska Bureau of Business Research, published in September 1968. Dr. Roesler traces primary, secondary and indirect economic benefits of irrigation compared to dry land farming.

Dr. Roesler deduced that the economic boost provided by irrigation in 1963 was a staggering $812,336,000. About 2.7 million acres were under irrigation then. Now it's about 4 million. He came up with a figure of $302.32 more economic activity generated per acre irrigated as compared to dry land farming.

But the one-time cost of conversion to irrigation, estimated to generate $712 worth of economic activity per acre, is over and above that.

The Beaver Crossing Dam-Reservoir, recommended in the basin water plan, includes water storage sufficient for surface irrigation of 30,000 acres in the Goehner and Dorchester areas, if people of those areas desire it.

Applying Dr. Roesler's findings to the 30,000 acres gives a rough idea of economic activity that would stem outward from the basin's agricultural base to other interdependent trades and services: slightly more than $9 million per crop year.

Irrigation water comes from two sources--pumping it from streams and pumping it from the ground. Of more than 489,000 irrigated acres in the basin, more than 50,000 are supplied with water pumped out of the Big Blue or its tributaries under 500 water rights issued to streamside owners.

Lately, high need and low supply in the upper basin have produced strong feelings in the lower areas. Surface rights are on a numerical priority system, but few, if any, violators have been fined. It's a difficult law to enforce.

At Wymore in the far southeast end of the basin, Duane Allington, Gage County Soil and Water Conservation District chairman, underscores another source of friction in surface water rights.

He says, "To complete a water agreement with Kansas, the Department of Natural Resources in 1970 required those who hadn't used their right in a three-year period to come up for hearing and prove need to retain it.

"Gage County lost three rights; some went back to the '40's. Three years around here in a higher rainfall belt where irrigation is supplemental is not a fair period. Farmers up and down the river feel this way. If legislation is the only way this can be changed, it should be done. Even a new number would require the cost of engineering work--and still the new number would be lower in seniority. Around here, there's much bad feeling over this."

Norman Behrens of Crete agrees that the Kansas-Nebraska water compact leaves something to be desired. "We can't shut the river off," he says. "We have to allow so much flowage." He feels Kansas came up with most of the benefits.

Farmers see irrigation as a source of bigger yield and income. But Virgil Rossiter whose farm borders the Big Blue southeast of DeWitt sees it as a possible source of flooding.

He recalls a story told him by Lewis Wiebe, a friend who farmed near Henderson before retiring to live at Beatrice. Several years ago Wiebe and another man were irrigating a field. With half of it done, one asked: "Shall we take our pipe over to the other half?"

"No", said the other, "It looks like it's going to rain."

So they didn't. Soon in the irrigated part the rain water was running off--running down into the Big Blue. In the unirrigated half, water was being absorbed into the ground.

"I'm not against irrigation," says Rossiter. "But that proves it. An awful lot of runoff from each rain goes off the irrigated ground in the northwest part of the basin and into streams--often at a damaging rate. Our farm, our area, and the entire town of DeWitt have suffered losses from devastating floods."

(Next: Ground water reserves--one man's view.)

Special to the Beatrice Sun and Henderson News

(Editor's Note: This is the fourth in a series prepared by Doane College on the Big Blue River Basin Water Plan.)

By Charles Hein
Doane College

Old Testament writer Ecclesiastes put his finger on a piece of truth when he wrote, "All the rivers run into the seas; Yet the sea is not full; Unto the place from whence the rivers came; Thither they return again."

Ecclesiastes explained the hydrologic cycle. Rain, water rushing to the sea only to be airborne again by nature to form clouds whose rain replenishes the soil.

The Cycle is never-ending.

Put a "maybe" behind that. Ecclesiastes didn't figure on man upsetting the cycle. Man does that when he takes more water out of the ground than he puts back.

"Our ground water reserve is just like a checking account. If we use it foolishly and too long without maintaining a balance of deposits and withdrawals, it's going to end up zero."

That's John R. Doell talking, a ruddy-faced, gray haired Henderson farmer planning to retire next year.

Water, he says, is the life of this land, a God given resource. That's why he's been "working with and very interested in" the Big Blue River Basin Water Plan.

Experience with York's and other counties' ground water depletion records has convinced him that "even though Nebraska has the largest water reserve in the 48 (continental) states, we are not inexhaustible."

Not everyone in agriculture in this area agrees with this, he says. "Some farmers around here say that the ground water will never be pumped out--but they are looney as hoot owls. We've seen where it has happened."

Concern with depletion of the water table furrows many brows. Depletion varies from area to area. Nebraska Irrigation Coordinator Les Sheffield says there's "considerable concern" because of heavy well development in Hamilton and York and parts of Butler, Polk and Seward counties.

In much of the basin, reliable ground water level records show steady downward progression, never coming back up to earlier levels. To Doell it's as simple to understand as imbalance in the checkbook.

Up to 700,000 acre feet of water are withdrawn by pumping but normal rainfall deposits only about 175,000 acre feet each year. In dry years, more is withdrawn, less deposited.

Doell grew up before the impact of irrigation on farming. "Like many, I saw years when we didn't make enough to pay taxes," he recalled. "When I started farming in 1943, York County's average wheat yield was 11 bushels an acre; its corn averaged 18.

"Today any farmer who doesn't do 118 bushels of corn to the acre in a normal year has goofed," he said. He attributes the change to "the immediate benefits of moisture when needed, to long-term soil build-up derived from irrigation, to better farming techniques like fertilizing and turning back crop residue instead of burning it, and to development of improved seed."

Doell has won statewide recognition several times for farming achievements. One award is a golden jumbo ear of corn plaque for highest yield in Nebraska in a seed company's test plot contest. That was in 1958. The yield? A cool 186 bushels per acre.

"That's not unusual now," he says. "Irrigation has made a tremendous difference to farmers of this area." Yields have gone from 75 bushels per acre to 200.

The year before Doell won the Skelly award for Nebraska--a plaque for superior achievement in agriculture, scientific farming and soil conservation, for work in fertilization.

The work that won that one was simple compared to one of his first efforts involving fertilization after World War II. In 1946 he was the first Henderson area farmer, and one of 16 in York county, to buy commercial fertilizer.

The difficulty came in persuading the owner, the U.S. Army, to sell the carload of nitrogen ready and labeled for shipment to Puerto Rico as an explosive. Persistent farmers carried the day.

Doell's share, 26 one hundred pound bags of 32 percent nitrogen, was the source of his first fertilizer application. He has never been a dry land farmer. He bought his farm adjoining the I-80 Henderson exit in late 1943 while working as a mechanic in Henderson.

He drilled the third well there, going down 180 feet. "The amount of rainfall we get here and the capability of our soil here is such that we use irrigation in the wettest of seasons," he said.

"We have had 30 inches of rainfall in a season and our average is 27--but even with the more abundant rainfall we use the irrigation. I've kept accurate rainfall records since 1953."

Doell is one of the farmers who formed a York County Irrigators' Association in 1956, which since 1958 has kept representative irrigation and ground water level records. In 1967 it sponsored publication of an Extension Service booklet on York County's Ground Water.

Doell calls attention to one of its many graphs depicting sharply declining ground water reserves. It is labelled "Computer Predicted Contours of Ground Water Level Declines, 1948-1982."

People concerned about the water table keep that last figure in mind.

To gain data to feed the computer the U.S. Geological Survey constructed an electrical model simulating the aquifer, ground water movement, rainfall and other characteristics of the Big Blue River Basin.

It was assumed irrigation in York County would steadily increase to 50 percent over 1962's total by 1982. With all this data the computer calculated what level the projected increase would take the ground water table down to.

But the prediction didn't hold water.

"Our ground water table has already dropped to 1982's predicted level," says Doell ruefully. "While we still have water available, this statistical trend is something both farmers and members of the business community might carefully consider."

To Doell it's a matter of preserving the truth established by Ecclesiastes and balancing the water checkbook.

To drive home his point, he added: "Just recently a farm near me sold for $1,039 an acre. Without the ground water, it would have been $139 an acre."

(Next: Pollution problems -- an overview.)

Special to the Beatrice Sun and Henderson News

(Editor's Note: This is the fifth in a series prepared by Doane College on the Big Blue River Basin Water Plan.)

By Charles Hein
Doane College

"Too liquid to plant in, too thick to drink."

That's how a Crete farmer describes the Big Blue River downstream. But who would want to drink from it? The Big Blue's flow contains both water and pollutants.

It's clear who claims the water. Some 500 streamside property owners in the basin have rights to pump it for irrigation.

But who claims these pollutants:

---Sedimentation from soil erosion?
---Phosphates from synthetic household detergents?
---Brush, debris and toppled trees?
---Feedlot wastes from large scale feeding operations bordering streams?
---Human wastes ineffectively treated in overloaded sewage disposal systems?
---Human wastes effectively treated by disposal systems, but not disinfected?
---Agricultural nutrients (chemical fertilizers) harmful to water plants and fish, potentially harmful to humans?

Up to now pollutants have been nobody's baby. But that's changing. Somebody is about to claim responsibility for some of them, and some things will get done.

That can be credited to the Unicameral's recent passage of legislation creating Natural Resources Districts (NRD). They are new; they are controversial.

The claim is they are improved versions of soil and water conservation districts. Geographically, they are bounded by drainage districts, rather than county lines. They're funded with a one mill levy.

Duane Allington of Wymore, a retired farmer, is interim chairman of the new Big Blue River Basin Natural Resources Board. He's also chairman of the Gage County Soil and Water Conservation District.

There are rough times ahead for the Natural Resources District," he said, "but I think the NRDs will fill a large gap. All the soil conservation work will be continued as before. We expect no reduction in Soil Conservation Service force--if anything there might be some expansion. We hope that where ever there is an office building, that that office will remain, and most likely the same technicians."

Allington says, "There will be a broader concept of flood control and concern with air, solids, and stream pollution."

He is also optimistic. He says, "If we can operate more efficiently and on broader scope, it may lead to implementation of the Big Blue River Basin Plan."

Some farmers--like Lawrence Vitosch of near O'Dell--view the 24 NRDs that will replace 86 Soil and Water Conservation Districts with mixed feelings. Vitosch likes some features, dislikes others.

The fact that the NRD provides a way of taxing an entire area for costs of solving its problems makes sense to him. So does the fact that this facilitates an area-wide approach to solutions.

What he dislikes is loss of some local control. He explains: "The new NRD board of our district (of which he is a newly elected member) will consist of 76 people for awhile. They are the present members of watershed district and sub-district boards from all the counties in the NRD.

"Sometimes six people now sit at a meeting all night long to solve the problems. How will a board of 76 be able to cope? People feel the quality and individuality of board relationships will suffer. Everyone I've talked to, this has been a big issue--though they are glad to see the taxing tool."

Allington foresees a different benefit from NRDs being funded with taxes. He described "almost total lack of communication, cooperation and mutual interest between the people of town and farm communities" in his area. Moreover, he said, a feeling is prevalent among farmers "that they are looked down upon by town people."

He says "town people have shown neither interest in nor appreciation of farmer-financed and planned conservation work which benefits them--like the new 150-acre Rockford Lake near Beatrice." He says townsmen lack knowledge and concern about water and soil problems.

But, he says, "Now that they'll be taxed for the benefits provided in NRDs, they'll probably have more interest. At least we hope so."

Changeover from the 76-man board has started; the tapering down began with each of the 16 counties nominating one person to work on the central committee. Other board members will serve on working committees. The changeover takes place July 1.

Scope of NRD responsibilities will be defined by both state law and practice. One will be mosquito control. Another may be local responsibility related to water quality. "I think we'll fill a rather large gap in responsibility," he said.

He's already prepared to present for board consideration an impediment which could contribute to flooding located in northern Gage County.

"Years ago a large drift of debris collected there in the Blue, growing and becoming more difficult to dislodge," he said, "but no one really had the responsibility to see that it was cleared. The county is concerned with trees in the stream only when they come up against a bridge."

"Here," he said, "is where the NRD will be able to go in and relieve some bad situations. We'll be looking into needs for clearing and snagging in the river to reduce chances of flooding."

He expects another service will be cooperation in enforcement of feedlot waste control laws. He said state authorities are considering the possibility of having game wardens act in this field. The Unicameral has passed legislation requiring feeders to install feedlot waste control systems by December 1972.

It's still unclear what the full extent of NRD's environmental responsibilities will be.

What is clear is that concern about the environment in the basin is more than just talk.

(Next: Trickles and Torrents--One Man's View of Flooding)

Special to the Beatrice Sun and Henderson News

(Editor's Note: This is the sixth in a series prepared by Doane College on the Big Blue River Basin Water Plan.)

By Charles Hein
Doane College

Life on the Big Blue for Virgil Rossiter is either trickles or torrents. There is either not enough water, or too much.

Floods menace 242,000 acres of urban and agricultural land. Floods erode basin soil, clog river and tributary channels with debris, reduce and destroy crops, create sedimentation problems. Floods rob basin pocketbooks through higher taxes to pay for road, bridge and urban damages.

Between two lower basin cities subject to periodic flooding, Wilber and Beatrice, is another--DeWitt.

In 1860 Virgil Rossiter's grandfather came to the riverside place where Virgil and his sister Hazel still live. They were, and still are, farmers. His father was born there in 1869.

Virgil's ancestors regarded the location southeast of DeWitt as choice. It had good water for stock and household, timber for fuel, logs for building, clean air and virgin grass. There was wildlife, plenty of fish, and the floods didn't come too often.

His father played with Indian children who camped there along the stream. Virgil remained on the home place even after his father died at the age of 100.

Like his father and his grandfather, Virgil Rossiter's life is mixed up with the river. He is one of the earliest advocates of applying a water management flood control plan to the Big Blue.

"When I grew up here," he said, "our house was on the hillside, but our fertile riverside fields flooded. We expected a damaging flood about once in 12 years. As time went on the frequency of floods increased. Despite all the terracing, dams and ponds built, floods have increased."

He says one of the reasons is that northwest of DeWitt in the flat country, "a tremendous amount of irrigation goes on. In summer where their fields are saturated with irrigation water and we get a three-inch rain, the ground can't absorb any more and it all runs off."

For Rossiter it's a story of trickles and torrents.

"Even with rain, the river doesn't stay stable," he laments. "It's muddier and fishing hasn't been so good for eight or ten years."

Rossiter had to lower the cylinder in his livestock well last year because the water table dropped. His neighbor four miles south experienced a 15-foot drop, which gradually came back up. How far he isn't sure.

The Rossiter place is a farm of 120 acres, which he began working in 1922. Some years back he had the land planted into grass and put it in the Soil Bank under a 10-year contract.

"When the contract ran out," he recalls, "the whole farm was in grass and I hated to plow it up." It abounded with quail, pheasants, and game. "So we've been renting it out as pasture ever since--though it doesn't make us a lot." To supplement his income, Rossiter has a part-time job driving a road maintainer for the township.

Three ponds correct drainage and solve erosion problems, combined with a terrace at one side. The farmstead has a wild, brushy look, with its house nestled on a slope above the river. "Practically no water runs off the bottom of this farm," he said with pride.

Rossiter is a strong, if discouraged, believer in construction of dams for flood control and other purposes in the upper basin. He remembers that his father, too, along with others, tried for years to get flood protection for lower basin residents.

He starts to percolate when he recalls an Army Corps of Engineers meeting in Beatrice last April. It followed an October, 1970 meeting at which proponents of the Big Blue Basin water plan were told they'd need to get a local sponsoring organization, and they'd need to generate and demonstrate public enthusiasm for its projects.

Until the April 1971 meeting, the proponents had high hopes the dams would be built to protect downstream communities from periodic floods. To them, the need was distressingly evident. More than 100 residents from every part of the basin, plus officials representing Kansas and Nebraska state agencies, were present. Col. Robert G. Bening, district engineer from Kansas City, spoke.

What he had to say so stunned proponents that current interviewing of some who attended makes it seem that only his announcement that the Corps (applying the cost-benefit ratio the law requires) could not economically justify the proposed dams registered with the public who attended the meeting.

Some originally anticipated economic benefits tied in with Tuttle Creek Dam farther down the line, which protects Lawrence, Topeka, Kansas City and St. Louis, hadn't materialized, he said.

And to put it bluntly, flood losses weren't high enough on farmland and economically depressed towns to come anywhere near balancing the roughly estimated $75 million price tag at the other end of the cost-benefit scale.

"On the best of the six lake projects that we are considering, costs are approximately 50 percent greater than benefits...justification of this type of project does not appear likely..." Location of that site is Beaver Crossing, near I-80 west of Lincoln.

Rossiter continued: "At the end of his talk Colonel Bening invited members of the audience who wished to make statements to express their views, but no one else got up to speak.

"Later I asked some I knew who had planned to talk why they hadn't. They were so outraged by Colonel Bening's opening statement that they couldn't, they said. We feel the Corps is not taking everything into consideration. How can they?"

Suggestions that Crete, Wymore, DeWitt and Beatrice utilize levees and channel clearing--methods Colonel Bening did not hold out great hope for as economically justified--don't seem to provide an answer for Rossiter and some other riverside farmers.

"We need to prevent flooding, not control it after it gets here," he insists. "Above, this would withhold water from us. Below, it would bottleneck at Beatrice. The more it holds back there, the more it jeopardizes us up here. Spending $500,000 on dikes at Beatrice might just make our floods higher. It's a short range approach."

(Next: Not By A Damn Sight--The Beaver Crossing Project).

Special to the Beatrice Sun and Henderson News

(Editor's Note: This is the seventh in a series prepared by Doane College on the Big Blue River Basin Water Plan.)

By Charles Hein
Doane College

The sign's red letters shout the good news to the outsider driving into Beaver Crossing via its back door, State Spur 127.

"There's Joy In Jesus."

But an outsider who lets loose his imagination could conclude there's not much joy in town.

If he arrived at that because the town is old (only the post office is recent), or that it would be the perfect setting for a turn of the century melodrama, he would be wrong.

It's the dam business that rankles, specifically Beaver Crossing Dam and Reservoir, biggest of four proposed in the Big Blue River Basin Plan.

At the end of the main drag is the Home State Bank. Inside banker Uriah Stauffer expresses dislike of the idea of inundating some 17,000 acres of cropland which he says is "the best Seward County land, including some irrigation wells and some homes in this district."

He indicates opposition to the dam is strong, mainly among those whose land would be taken "probably from the general feeling that they wouldn't get fair enough compensation that they could replace their farms with something comparable."

People just beyond the proposed project area, expecting a rise in their property values, can be expected to feel differently, he said.

It's estimated as many as 85 rural property owners might be displaced by the dam. One of them is Mrs. Louis Tesar.

"We don't like it," she says. "We have about 376 acres and our son has 476, and it's all in one piece where our two sons use the same machinery.

There are five good wells that pump 2,000 gallons of water a minute, and we also have river pumping rights."

The Tesar's farm is close to Beaver Crossing. So is the farm of Mrs. Ruth Gard, whose sons have land holdings in the proposed dams' path.

Mrs. Gard has developed a tour drive of the area and production statistics to inform others that irrigated, well-equipped feeder farm operations will be inundated. Occasionally visiting VIPs get the full treatment. The tour ends at a country school house. The VIP is greeted by persons who share Mrs. Gard's view, joins in the singing of "God Bless America," followed by group prayer. It's all climaxed by coffee and dessert.

Down the line at Crete, people disagree. The only source who declined to be quoted in the series said "Beaver Crossing is the only natural dam because it has a natural basin. It has much going for it--environmental protection, recreational potential, it's near I-80. And what do you do when 1 million gallons of water flow into the state every year and 7 million flow out?"

Mrs. Gard questions Bureau of Reclamation engineers' conclusions. One is the need for irrigation. "We are irrigated here," she says. "They want to take 17,000 acres of very good cropland and put it under water. They talk about fewer farmers, the young leaving the farm for the city. This will force some of them off the land."

She said "the government proposes to take over 24,000 acres in all off the tax rolls in Seward and York Counties." She doesn't know the assessed valuation of the property and says "that isn't important. It's market value that counts."

She fears the government's right of eminent domain and does not think people in the area will be treated fairly. Would she be opposed even if offered fair compensation? She hesitated, then replied, "But where could you buy something to replace what you have now?"

Mrs. Gard claims the reclamation bureau's preliminary estimates didn't take everything into account. She says two small cemeteries would have to be moved, an apiary's business, a sand and gravel mining operation, summer cabins along the river and a rural church and school would be closed out.

And she questions that enough water is carried down by the Blue to have water behind the dam, if built. "The Blue isn't carrying much water even at this time of year," she said.

"If they have to build a dam," she said, "they could build it farther up." What about the 1950 flood? "York had a cloudburst." she said.

Downstream from the mouth of the Little Blue River, the flood caused damages of almost $600 million along the Big Blue, Kansas and Missouri Rivers.

Much of the damage occurred in the urban areas of Manhattan, Topeka, Lawrence and the two Kansas Cities. Damage at Beatrice came to more than $225,000. Losses to farmland and communities between Beaver Crossing and Beatrice were sizable.

Engineers who study rainfall and streamflow records for many years back to assess needs and draft water control plans, cite Southeastern Nebraska's tendency to receive quick, torrential rains over a fairly wide area as one significant source of flooding.

It's another case of trickles and torrents. Trickles in creeks and streams in the upper basin, that ultimately become torrents moving down the Big Blue.

(Next: Recreation--What's the Potential?)

Special to the Beatrice Sun and Henderson News

(Editor's Note: This is the eighth in a series prepared by Doane College on the Big Blue River Basin Water Plan.)

By Charles Hein
Doane College

It isn't possible, but imagine peeking over the east ridge of the Big Blue Basin and scanning all of the Salt Valley Watershed on the other side.

Nine reservoirs greet the eye. Last year they were visited by 1,544,642 pleasure seekers, according to estimates provided by the Nebraska Game, Forestation & Parks Commission. Nobody's calculated what that means in dollars and cents to the valley economy.

Built in the 1960's, the reservoirs provide protection and pleasure. There are some 4,000 acres of water for water sports and related activities.

Turn around and look west from the top of the ridge and you're looking into the Big Blue Basin. There the picture isn't as bright. Water sports areas and other types of recreation facilities are in short supply.

Here's how the picture looked when the Big Blue River Basin plan was issued in 1968. The figures come from the Game Commission.

STATUS OF NON-URBAN LANDS AND WATER FOR RECREATION

(in acres)

	1960			1980	
ACTIVITY	SUPPLY	DEMAND	NEED	DEMAND	NEED
Boating	NONE	2,610	2,610	4,408	4,408
Water-skiing	NONE	909	909	1,918	1,918
Swimming	NONE	19	19	28	28

STATUS OF NON-URBAN LANDS AND WATER FOR RECREATION (Continued)

	1960			1980	
ACTIVITY	SUPPLY	DEMAND	NEED	DEMAND	NEED
Camping	4	90	86	328	324
Picnicking	13	146	133	203	190
LAND		236	219	531	514
WATER		3,538	3,538	6,354	6,354

The supply-demand situation isn't precisely that bad.

It's worse.

Proximity to the Lincoln and Omaha metropolitan areas whose demands also far exceed supply puts additional pressure on what facilities do exist in the basin.

There are reasons why this is so. The Nebraska Game Commission has to reckon with forces beyond their control in trying to meet the demand for water-based sports like boating and water-skiing.

For instance:

--More than half the population of Nebraska lives on 12 percent of its land area--in the eastern part--yet the largest lakes are in the west.
--Demand for water-skiing facilities is higher than for any other activity. It is expected to climb 127 percent by 1980, 462 percent by the year 2000.
--Terrain of eastern Nebraska is not naturally conducive to the development of large lakes to serve recreational needs. Opportunities to obtain recreational space with large water areas are scarce.

Consequently the Game Commission is always on the lookout for water to supply the metro areas' high recreational demand--and rarely finds it within easy driving distance.

Since the 1968 basin plan was issued, at least two lakes big enough for boating have been built in Gage County. They provide about 225 acres of boating-skiing surface. This leaves the basin areas' supply of that kind of acreage about 85 percent below demand.

Both lakes are by-products of soil conservation work. A 425-acre park was developed by the Game Commission at Rockford Lake, near Beatrice.

A 75-acre lake is near completion at Wymore, but whether recreation will be developed is up in the air. Gage County Soil & Water Conservation District chairman Duane Allington says no interest or concern is evident in Wymore.

Both were paid for by farmers in the drainage district. They taxed themselves. But that is a thing of the past now that Natural Resource Districts have been formed.

"Farmers taxed themselves and worked long and hard to provide Rockford Lake and every weekend it's full of campers and boaters from the city who haven't contributed a dime nor an hour to its creation," says Allington. He and others hope interest of city folk in conservation will blossom now that their tax money helps support it.

Several years ago the Gage County Soil Conservation Service studied recreation possibilities tied to soil improvement work, put the results in a booklet, and encouraged rural people to get interested in private recreational development--but it hasn't made waves, according to Chuck MacLean, SCS technician.

Local friction may deter farmers from thinking in bonanza terms about recreation, but some conservation-oriented farmers envision a $2 million harvest of economic gains to the basin economy as a by-product of a possible flood control dam at Beaver Crossing with future irrigation for the Goehner and Dorchester areas.

An idea of the scope of economic benefits from Bureau of Reclamation dam-reservoir projects is contained in a recently released Department of Interior study on Shadow Mountain Lake and Lake Granby reservoirs near Denver after 22 years time.

--Land values increased 17 times from $512,000 to $9,045,000, even though 41 percent of the land was inundated or purchased by government agencies.

--Improvements valued at $1,200,000 were built on that land.

--Public recreation facilities costing $675,000 were built and $124,000 spent to operate and maintain them.

--Retail sales from recreation within 25 miles of the site are $2.7 million annually. Boat sales reach $532,000 annually.

--Employment due to recreation development grew by 140 full-time summer jobs, 15 full-time winter jobs.

Water management proponent Allington admits he's discouraged. The Beaver Crossing dam and reservoir is the only one in the basin plan proposed for further study by the Bureau of Reclamation, following the Corps of Engineers turn-down on all the projects as not economically feasible.

"This year the Corps of Engineers told us we need to form an organization to inform people. We have--but we're no farther along than we ever were. We've been hearing this for 25 years," he said.

"There are more studies and more reports, more turn-downs from the Corps of Engineers office in Kansas--and more flooding. Yet when I drive through Kansas almost every time I go over a hill there is a big reclamation project," he continued.

"Dollar-wise our flood and other damage isn't enough to justify the cost of correction." He added somewhat bitterly, "they haven't heard of Appalachia yet--excuse me."

(Next: The Bureau and the Corps--What They Do and Why)

Special to the Beatrice Sun and Henderson News

(Editor's Note: This is the ninth in a series prepared by Doane College on the Big Blue River Basin Water Plan.)

By Charles Hein
Doane College

Can the Bureau of Reclamation come up with a cure for basin water problems?

Actually, it almost did.

To prepare a report requested for the basin water plan study, in 1965 it developed a reconnaissance report on the most promising of the four dams--Beaver Crossing. A feasibility report was made, with the thought of only providing benefits of water quality, recreation, fish and wildlife habitat, and flood control.

It was an economically justified project, with irrigation deferred. "It was ready to do," says Glen Kirk, chief of the Bureau of Reclamation's Kansas river projects planning division. "We were going to recommend it to Congress with the irrigation to follow in 10 years as ground water problems and need for their correction became apparent.

"That was about five years ago. There was a national change in the interest discount rate. What had been 3¼ percent jumped sharply and its been going up one-fourth percent a year.

"We never have had economic feasibility on that type of project since, because interest so upped the costs. We shelved it until a better time," he said.

Basin water problems have not improved with neglect. Over appropriation of river surface water has all but brought on water wars. Today ground water depletion rates concern not only farmers but state and local officials as well.

What can the Rec Bureau offer?

Engineer Kirk says, "the potential exists for a new start." That's the Bureau's way of saying "Barkis is willin'--if you make the first move." In other words, agencies exist to serve people and people need to make their needs known.

The first move would be to request funding of a $300,000 four-year study of the feasibility of conjunctive use of ground and surface water irrigation to extend life of the water table as part of the Sunbeam Unit of the proposed Beaver Crossing project.

Conjunctive use theory is that deep percolation achieved through canal-type surface water irrigation, interspersed in an area with some already existing well irrigation, goes into the aquifer and recharges the ground water supply.

The 10 years' leeway for the irrigation side of the project in 1965 is nearly gone--and the problem is outracing the time estimate.

Departmental estimates for the 1973 federal budget are already in the complicated allocation process mill. The earliest the irrigation study appropriation could come is 1974, even with strong pressure from people right now.

The study itself requires four years of intensive engineering work that will include soil studies on some 200,000 acres in connection with the irrigation part of the projects. Flood control engineering and other data also have to be updated.

With irrigation features added now, Kirk believes that the Beaver Crossing project will be "a viable, politically supported project," especially by 1978 when the feasibility study is completed.

The process of review with its department and elsewhere and approval by the Office of Management & Budget, which precedes submission of a project to be included in the President's budget, is long and complicated.

Then there is need for strong political support in Congress where competition for federal dollars is keen. If a project is rejected, time consumed in reaching that point again may be years.

Next step is a bill in Congress asking authorization of funds. Next, a bill asking the appropriation. Usually authorization comes from one session, funding from the next, and that's another year's time.

"It takes seven years," says Kirk. "There's no way to get going in less time. If there's not enough excitement by the people about water resource development, there may be a lag, an extension. Water resource development competes with all the nation's many other pressing needs for funds," he said.

Once a project is funded, Kirk said, the Rec Bureau's engineers spend the first year in final design and engineering. Construction of a dam usually requires four to five years.

Under present procedures, it appears the earliest the Sunbeam Unit--which includes the Beaver Crossing dam and reservoir with the flood control capacity recommended by the Corps of Engineers, with recreation land needs estimated at 120 acres by the State Game Commission, with fish-wildlife needs of 480 acres specified by the U.S. Fish and Wildlife Service, and with irrigation facilities--the earliest is 1990 or 1991.

Irrigation features of the project include a Goehner pumping plant to lift irrigation water to the Goehner area through a 78-inch wide, 3,500 foot long pipeline, and the Dorchester diversion dam and pumping plant located on the west fork of the Big Blue, some 20 stream miles below the Beaver Crossing dam.

Water would be diverted from the river to the pumping plant by means of a concrete river control section with a sluiceway for bypassing silt. Irrigation water would be conveyed by canals. Overall costs of the multipurpose project are contained in an unpublished feasibility report, "Beaver Crossing Dam & Reservoir," based on 1968 prices.

Irrigation, $32,628,700; flood control (nonreimbursable); recreation, $5,239,700 with $325,900 reimbursable by the Game Commission; fish and wildlife, $5,263,300, with $138,800 reimbursable by the U.S. Fish and Wildlife Service.

Irrigation construction costs are partially reimbursable by the irrigation district, based on the irrigators' ability to pay them. An economic analysis of area farm economy determines the cost.

Balance of irrigation construction costs may be met, if the irrigators' ability to pay is limited, from Rec. Bureau income generated from the sale of hydroelectric power at projects elsewhere.

Will it be built? Time, the river and people can answer that question.

(Next: Healers at Work.)

Special to the Beatrice Sun and Henderson News

(Editor's Note: Last in a series prepared by Doane College on the Big Blue River Basin Water Plan.)

By Charles Hein
Doane College

The claim is that in the basin at floodtide Indians could see water from bluff to bluff.

Whether fact or fiction, the point is made: Tall prairie grasses spawned by Nature regulated the runoff.

Then came man--and speeded it up.

Too often he broke and plowed the prairie unwisely. When he did the water no longer stayed where it fell. Instead, topsoil-laden, it rushed into the waterways and down the valley.

Sores left in the land didn't heal. And when the open wounds got worse man recorded floods which picked his pocket and broke his heart.

Now the healers are at work.

They are the water conservation districts, watershed advisory improvement boards, federal and state agencies. One is the Gage County Soil and Water Conservation District (GCSWCD). In spite of lobbying, dollars spent and protests, the local agencies soon will disappear, merged into the newly created Natural Resource District.

The GCSWCD began its first intensive watershed action in 1953. Today the area proudly identifies itself as the "Watershed Capitol of the World."

The records support them. Today there are 9,466 miles of terraces, enough to reach from Beatrice to Berlin and most of the way back. More than 11,600 acres of waterway are grassed. Farm windbreaks total 384 already, although that program began only eight years ago. More than 11,300 acres of range are seeded, 3,210 acres of land are leveled and 85 watersheds have been built. That's the record through 1970.

The GCSWCD story is perhaps the outstanding example of what is occurring basin-wide. Local districts combine soil and water conservation practices and flood control. Cropland is contoured and terraced. Waterways are grass. Soil Conservation Service structures hold back runoff.

In locality after locality the sores are healing. But what of the Big Blue picture totally, from bluff to bluff and source to mouth?

Unlike the neighboring Salt Valley, there are no large Corps of Engineers dams which store water, control major floods and provide recreation.

Unlike other areas in Nebraska, it can boast no huge reclamation projects to provide surface irrigation and ground water table recharge.

All the Big Blue Basin has is need--and not all of its people are convinced of that.

In 1968 when the Nebraska Soil and Water Conservation Commission issued the Big Blue River Basin Water Plan, "We lacked support and we had no sponsoring agency," says Lowell Rochester of Crete.

Rochester is a businessman active in Citizens for Water Management, a new citizen-oriented basin-wide organization beginning to flex its muscle in water affairs.

He and other officers elected in February believe they have that now in the Natural Resource District, even though the Corps of Engineers still contended in 1971 that the cost-benefit ratio isn't there to implement major flood control features of the plan.

Others are depending on the Bureau of Reclamation to move along with the big dam at Beaver Crossing. They feel this would correct a long-standing Corps injustice.

The Big Blue, they say, was handled just opposite of most rivers. On other rivers reservoirs were built at the source, but the Corps went to the mouth to build the big dam at Tuttle Creek, although nobody denies the need for flood protection at Kansas City.

One Beatrice businessman who talked to this reporter no longer sees flooding in his town as a major threat, based on accomplishment in "The Watershed Capitol."

But leaders of the Soil and Water Conservation District which worked on planning and authorization details for Gage County's structures warn about complacency over flooding because of small structures.

Not all counties have as much soil conservation work in place as Gage County. And GCSWCD Chairman Duane Allington stresses that many of the county's structures have been in use for decades and normal sedimentation has reduced their efficiency.

Moreover, he adds, many small pond or dam structures throughout the basin need upkeep--the limitations written into the NRF law seem to preclude this. Upkeep, he says, means having service equipment and a central garage somewhere in the Big Blue NRD to keep it in--something not permitted under present NRD law.

Allington is critical of apparent complacency in Beatrice city leadership, which permitted construction of one of the city's newer shopping centers on the flood plain. So, he added, was the Corps of Engineers.

Upstream at DeWitt, Crete and Seward the sense of security is less. Crete's Norman Behrens says, "It may take another serious flood for people to wake up," although he hopes it never happens.

Prodding from 1965 federal legislation instigated Nebraska's Natural Resource Districts, bounded by drainage areas, rather than county lines, with the ability to serve needs that in use are inseparable: soil and water resource development and environmental needs.

A similar assignment of responsibilities is shaping up at the state level under the Nebraska Natural Resources Department.

When dealing at the federal level, citizen proponents of water resource development encounter a different situation.

Where the State of Nebraska has lately developed a framework state-wide plan for future water resource development, there is no corresponding single federal agency responsible. Moreover, Congress has never worked out a clear and specific program of national water resource development.

Thinking back over the interviews and pounds of written words studied in putting this series together, questions arise.

To what degree have political considerations, rather than actual need, influenced the timing of projects?

Do the decades of waiting and the present need to develop popular pressure for and against potential projects work to the disadvantage of everyone concerned?

Under 110,000 people live in the basin, no more than a small city. What might have happened had someone or some organization filed for action under the equal protection clause of the 14th amendment?

One could go on.

But consider:

--Many leaders in the fight for water management probably will not live to see their objective become reality, especially if almost 20 years will be required.

Some of them, now past middle age, are not the original people who promoted the solution to the problem, but are their sons.

--Would the problem have received faster consideration under a clearly defined water resource development policy and with a clear line of responsibility centered in one federal agency?

--Owners of rich agricultural land in the area of potential inundation are adversely affected by something that may or may not ever be built - the Beaver Crossing dam-reservoir Sunbeam Unit. Their real estate values and long range credit existed under the cloud of a potential dam project that is a maybe at best.

Talking about Lend Lease years ago, Franklin Roosevelt said if your neighbor has a fire and you have a length of hose, you lend him the hose.

Advocates of the Big Blue River Basin Plan have yet to convince the population--basin-wide--that what affects one affects all. At the same time, proponents of the plan may have to convince their political leadership in Washington that the Agency Shuffle on the federal level has to end and a consistent national policy begin.

There is much more to the basin water plan than flood control. It's an economic blueprint for the future, one its backers believe will correct deficiencies that rob the basin of dollars and cents, stem the out-migration of young people and, above all, be a jealous guard of the basin's biggest resource--water.

In a sense this series ends where it began. The Big Blue is still evil-doer and Saint. The basin plan itself is in a kind of political purgatory. It will take more than goodwill and prayer to end the punishment.

APPENDIX VI

This appendix contains the chi-square measurement of net attitude change in rural and town areas for each attitude statement. It also includes V^2 scores which are based on chi-square values and using as a benchmark the value of $V^2 = .0107$ in urban Beatrice on the statement about clearing river channels. *Indicates favorable response.

CHLORINATION

Cities should use chlorination to disinfect their water supply.

Percentage

	Survey		Net Change	
Area 1 - Friend Rural	First	Second		
*Agree	44.2	54.3	+10.0	$x^2 = 1.543$
Undecided	44.2	37.0	- 7.2	at 2 df
Disagree	11.4	8.6	- 2.7	$p < .50$
N =	70	81		
Area 1 - Friend Town				
*Agree	55.5	62.9	+ 7.4	$V^2 = .0218$
Undecided	28.3	16.2	-12.1	$x^2 = 6.895$
Disagree	16.0	20.7	+ 4.7	at 2 df
N =	162	154		$p < .05$
Area 2 - Seward Rural				
*Agree	53.7	46.6	- 7.0	$x^2 = 1.453$
Undecided	28.7	35.8	+ 7.1	at 2 df
Disagree	17.5	17.5	- 0.0	$p < .30$
N =	108	120		
Area 2 - Seward Town				
*Agree	56.6	58.9	+ 2.2	$x^2 = 2.205$
Undecided	19.2	22.0	+ 2.8	at 2 df
Disagree	24.0	19.0	- 5.0	$p < .50$
N =	270	263		
Area 3 - Henderson Rural				
*Agree	49.0	46.7	- 2.3	$x^2 = 0.193$
Undecided	33.3	36.0	+ 2.7	at 2 df
Disagree	17.5	17.2	- 0.3	$p < .95$
N =	108	122		
Area 3 - Henderson Town				
*Agree	45.6	48.8	+ 3.1	$x^2 = 0.267$
Undecided	25.9	24.0	- 1.9	at 2 df
Disagree	28.3	27.1	- 1.2	$p < .90$
N =	127	129		
Area 4 - Beatrice Rural				
*Agree	56.7	40.6	-16.1	$V^2 = .0262$
Undecided	25.9	34.0	+ 8.1	$x^2 = 4.522$
Disagree	17.2	25.2	+ 7.9	at 2 df
N =	81	91		$p < .20$

Cities should use chlorination to disinfect their water supply.
(Continued)

Percentage

	Survey		Net	
	First	Second	Change	
Area 4 - Beatrice Town				
*Agree	53.7	55.2	+ 1.5	$x^2 = 0,288$
Undecided	15.9	14.4	- 1.5	at 2 df
Disagree	30.2	30.2	- 0.0	$p < .90$
N =	294	304		

WATER QUALITY AND PROPER FARMING METHODS

Hilly land near streams should not be used for crops.

Percentage

Area 1 - Friend Rural				
*Agree	31.4	41.9	+10.5	$V^2 = .0174$
Undecided	18.9	1.1	- 7.4	$x^2 = 2.634$
Disagree	50.0	46.9	- 3.0	at 2 df
N =	70	81		$p < .30$
Area 1 - Friend Town				
*Agree	39.5	43.5	+ 4.0	$x^2 = 0.650$
Undecided	23.4	23.3	- 0.0	at 2 df
Disagree	37.0	33.1	- 3.9	$p < .80$
N =	162	154		
Area 2 - Seward Rural				
*Agree	27.3	39.1	+11.8	$V^2 = .0231$
Undecided	7.5	10.8	+ 3.2	$x^2 = 5.234$
Disagree	65.0	50.0	-15.0	at 2 df
N =	106	120		$p < .10$
Area 2 - Seward Town				
*Agree	31.9	35.3	+ 3.3	$x^2 = 0.697$
Undecided	21.1	19.7	- 1.4	at 2 df
Disagree	46.8	44.8	- 1.9	$p < .80$
N =	269	263		
Area 3 - Henderson Rural				
*Agree	34.2	32.7	- 1.4	$V^2 = .0163$
Undecided	14.8	7.3	- 7.4	$x^2 = 3.769$
Disagree	50.9	59.8	+ 8.9	at 2 df
N =	108	122		$p < .20$

Hilly land near streams should not be used for crops. (Continued)

Percentage

	Survey		Net	
	First	Second	Change	
Area 3 - Henderson Town				
*Agree	29.1	35.6	+ 6.5	$x^2 = 1.718$
Undecided	21.2	16.2	- 4.9	at 2 df
Disagree	49.6	48.0	- 1.5	$p < .50$
N =	127	129		
Area 4 - Beatrice Rural				
*Agree	28.3	24.1	- 4.2	$x^2 = 0.947$
Undecided	18.5	15.3	- 3.1	at 2 df
Disagree	53.0	60.4	+ 7.3	$p < .70$
N =	81	91		
Area 4 - Beatrice Town				
*Agree	31.6	30.9	- 0.7	$x^2 = 0.238$
Undecided	20.4	22.0	+ 1.6	at 2 df
Disagree	47.9	47.0	- 0.9	$p < .90$
N =	294	304		

The use of insecticides and herbicides should not be limited.

	First	Second	Net Change	
Area 1 - Friend Rural				
Agree	27.1	25.9	- 1.2	x^2 = Not valid
Undecided	7.1	1.2	- 5.9	
*Disagree	65.7	72.8	+ 7.1	
N =	70	81		
Area 1 - Friend Town				
Agree	17.2	9.0	- 8.1	$V^2 = .0372$
Undecided	12.9	5.1	- 7.7	$x^2 = 11.772$
*Disagree	69.7	85.7	+15.9	at 2 df
N =	162	154		$p < .01$
Area 2 - Seward Rural				
Agree	36.4	26.6	- 9.7	$V^2 = .0327$
Undecided	15.8	8.3	- 7.5	$x^2 = 7.436$
*Disagree	47.6	65.0	+17.3	at 2 df
N =	107	120		$p < .05$

The use of insecticides and herbicides should not be limited. (Continued)

Percentage

	Survey		Net Change	
	First	Second		
Area 2 - Seward Town				
Agree	11.9	6.4	- 5.4	$x^2 = 5.075$
Undecided	8.9	11.0	+ 2.0	at 2 df
*Disagree	79.1	82.5	+ 3.4	$p < .10$
N =	268	263		
Area 3 - Henderson Rural				
Agree	36.1	39.3	+ 3.2	$x^2 = 0.490$
Undecided	16.6	18.0	+ 1.3	at 2 df
*Disagree	47.2	42.6	- 4.6	$p < .80$
N =	108	122		
Area 3 - Henderson Town				
Agree	13.3	10.0	- 3.3	$x^2 = 0.701$
Undecided	11.8	11.6	- 0.1	at 2 df
*Disagree	74.8	78.2	+ 3.4	$p < .80$
N =	127	129		
Area 4 - Beatrice Rural				
Agree	27.1	21.9	- 5.1	$V^2 = .0270$
Undecided	12.3	25.2	+12.9	$x^2 = 4.661$
*Disagree	60.4	52.7	- 7.7	at 2 df
N =	81	91		$p < .10$
Area 4 - Beatrice Town				
Agree	6.8	9.2	+ 2.4	$x^2 = 2.324$
Undecided	8.2	10.5	+ 2.3	at 2 df
*Disagree	84.9	80.1	- 4.7	$p < .50$
N =	292	303		

Terracing and contouring on hilly land are needless agricultural expenditures.

	First	Second	Net Change	
Area 1 - Friend Rural				
Agree	8.5	6.2	- 2.3	x^2 = Not valid
Undecided	7.1	1.2	- 5.8	
*Disagree	84.2	92.5	+ 8.2	
N =	70	80		

Terracing and contouring on hilly land are needless agricultural expenditures.
(Continued)

	Percentage			
	Survey			
	First	Second	Net Change	
Area 1 - Friend Town				
Agree	10.4	7.1	- 3.3	$V^2 = .0173$
Undecided	10.4	4.5	- 5.9	$x^2 = 5.495$
*Disagree	79.0	88.3	+ 9.3	at 2 df
N =	162	154		$p < .10$
Area 2 - Seward Rural				
Agree	7.4	3.3	- 4.0	x^2 = Not valid
Undecided	1.8	1.6	- 0.1	
*Disagree	90.7	95.0	+ 4.2	
N =	108	120		
Area 2 - Seward Town				
Agree	10.7	4.9	- 5.8	$V^2 = .0118$
Undecided	4.8	5.7	+ 0.8	$x^2 = 6.309$
*Disagree	84.3	89.3	+ 4.9	at 2 df
N =	269	263		$p < .05$
Area 3 - Henderson Rural				
Agree	13.8	7.4	- 6.4	$V^2 = .0177$
Undecided	2.7	6.6	+ 3.8	$x^2 = 4.058$
*Disagree	83.3	85.9	+ 2.6	at 2 df
N =	108	121		$p < .20$
Area 3 - Henderson Town				
Agree	6.2	10.0	+ 3.7	$x^2 = 1.774$
Undecided	7.0	4.6	- 2.4	at 2 df
*Disagree	86.6	85.2	- 1.3	$p < .50$
N =	127	129		
Area 4 - Beatrice Rural				
Agree	1.2	4.3	+ 3.1	x^2 = Not valid
Undecided	1.2	3.2	+ 2.0	
*Disagree	97.5	92.3	- 5.2	
N =	81	91		
Area 4 - Beatrice Town				
Agree	6.8	5.2	- 1.5	$x^2 = 1.053$
Undecided	9.2	7.8	- 1.3	at 2 df
*Disagree	83.9	86.8	+ 2.8	$p < .70$
N =	293	304		

Farmers should prevent silt from polluting streams.

Percentage

	Survey		Net Change	
	First	Second		
Area 1 - Friend Rural				
*Agree	78.5	95.0	+16.4	x^2 = Not valid
Undecided	10.0	3.7	- 6.2	
Disagree	11.4	1.2	-10.1	
N =	70	80		
Area 1 - Friend Town				
*Agree	81.9	92.2	+10.2	$V^2 = 0.373$
Undecided	13.0	2.5	-10.4	$x^2 = 11.775$
Disagree	4.9	5.1	+ 0.2	at 2 df
N =	161	154		$p < .01$
Area 2 - Seward Rural				
*Agree	81.4	81.6	+ 0.1	$V^2 = .0113$
Undecided	5.5	10.0	+ 4.4	$x^2 = 2.579$
Disagree	12.9	8.3	- 4.6	at 2 df
N =	108	120		$p < .30$
Area 2 - Seward Town				
*Agree	85.1	85.8	+ 0.6	$x^2 = 0.075$
Undecided	8.1	8.0	- 0.1	at 2 df
Disagree	6.6	6.1	- 0.5	$p < .98$
N =	269	261		
Area 3 - Henderson Rural				
*Agree	85.0	75.4	- 9.6	$V^2 = .0150$
Undecided	8.4	12.2	+ 3.8	$x^2 = 3.446$
Disagree	6.5	12.2	+ 5.7	at 2 df
N =	107	122		$p < .20$
Area 3 - Henderson Town				
*Agree	89.6	87.5	- 2.1	x^2 = Not valid
Undecided	8.7	10.9	+ 2.2	
Disagree	1.5	1.5	- 0.0	
N =	126	128		

Farmers should prevent silt from polluting streams. (Continued)

Percentage

Area 4 - Beatrice Rural

	Survey First	Survey Second	Net Change	
*Agree	91.3	78.0	-13.3	$V^2 = .0428$
Undecided	1.2	9.8	+ 8.6	$x^2 = 7.376$
Disagree	7.4	12.0	+ 4.6	at 2 df
N =	81	91		$p < .05$

Area 4 - Beatrice Town

	Survey First	Survey Second	Net Change	
*Agree	86.7	84.2	- 2.5	$x^2 = 5.770$
Undecided	3.7	8.2	+ 4.4	at 2 df
Disagree	9.5	7.5	- 1.9	$p < .10$
N =	294	304		

Conservation practices on farm land should be required by law.

Area 1 - Friend Rural

	Survey First	Survey Second	Net Change	
*Agree	28.5	28.7	+ 0.1	$x^2 = 1.139$
Undecided	17.1	11.2	- 5.8	at 2 df
Disagree	54.2	60.0	+ 5.7	$p < .70$
N =	70	80		

Area 1 - Friend Town

	Survey First	Survey Second	Net Change	
*Agree	47.5	45.4	- 2.0	$x^2 = 0.611$
Undecided	20.9	24.6	+ 3.6	at 2 df
Disagree	31.4	29.8	- 1.6	$p < .80$
N =	162	154		

Area 2 - Seward Rural

	Survey First	Survey Second	Net Change	
*Agree	38.3	29.1	- 9.1	$V^2 = .0126$
Undecided	10.2	15.8	+ 5.5	$x^2 = 2.871$
Disagree	51.4	55.0	+ 3.6	at 2 df
N =	107	120		$p < .30$

Area 2 - Seward Town

	Survey First	Survey Second	Net Change	
*Agree	56.1	52.0	- 4.0	$x^2 = 2.201$
Undecided	20.2	18.6	- 1.5	at 2 df
Disagree	23.5	29.2	+ 5.6	$p < .50$
N =	267	263		

Conservation practices on farm land should be required by law. (Continued)

Percentage

	Survey First	Second	Net Change	
Area 3 - Henderson Rural				
*Agree	25.9	35.2	+ 9.3	$V^2 = .0165$
Undecided	15.7	9.0	- 6.7	$x^2 = 2.503$
Disagree	58.3	55.7	- 2.6	at 2 df
N =	108	122		$p < .30$
Area 3 - Henderson Town				
*Agree	51.9	58.9	+ 6.9	$x^2 = 2.503$
Undecided	21.2	13.9	- 7.3	at 2 df
Disagree	26.7	27.1	- 0.3	$p < .30$
N =	127	129		
Area 4 - Beatrice Rural				
*Agree	32.0	28.5	- 3.5	$x^2 = 0.420$
Undecided	12.3	10.9	- 1.3	at 2 df
Disagree	55.5	60.4	+ 4.8	$p < .90$
N =	81	91		
Area 4 - Beatrice Town				
*Agree	54.6	54.4	- 0.15	$x^2 = 7.875$
Undecided	12.6	20.1	+ 7.5	at 2 df
Disagree	32.7	25.4	- 7.3	$p < .02$
N =	293	303		

POLLUTION ABATEMENT

All towns and industries should be prohibited from polluting streams.

	First	Second	Net Change	
Area 1 - Friend Rural				
*Agree	91.4	97.5	+ 6.1	x^2 = Not valid
Undecided	7.1	2.4	- 4.6	
Disagree	1.4	0.0	- 1.4	
N =	70	81		
Area 1 - Friend Town				
*Agree	91.9	97.4	+ 5.4	x^2 = Not valid
Undecided	4.3	0.6	- 3.6	
Disagree	3.7	1.9	- 1.7	
N =	162	154		

All towns and industries should be prohibited from polluting streams.
(Continued)

	Percentage Survey First	 Second	 Net Change	
Area 2 - Seward Rural				
*Agree	96.2	90.8	- 5.4	x^2 = Not valid
Undecided	2.8	5.0	- 2.2	
Disagree	0.9	4.1	- 3.2	
N =	107	120		
Area 2 - Seward Town				
*Agree	95.1	97.7	+ 2.5	x^2 = Not valid
Undecided	3.7	1.1	- 2.5	
Disagree	1.1	1.1	+ 0.0	
N =	270	263		
Area 3 - Henderson Rural				
*Agree	92.5	94.2	+ 1.6	x^2 = Not valid
Undecided	2.7	3.2	+ 0.5	
Disagree	4.6	2.4	- 2.1	
N =	108	122		
Area 3 - Henderson Town				
*Agree	92.1	92.2	+ 0.1	x^2 = Not valid
Undecided	6.2	4.6	- 1.6	
Disagree	1.5	3.1	+ 1.5	
N =	127	129		
Area 4 - Beatrice Rural				
*Agree	90.1	91.2	+ 1.0	x^2 = Not valid
Undecided	4.9	5.4	+ 0.5	
Disagree	4.9	3.2	- 1.6	
N =	81	91		
Area 4 - Beatrice Town				
*Agree	96.2	97.3	+ 1.1	x^2 = Not valid
Undecided	2.3	1.6	- 0.7	
Disagree	1.3	0.9	- 0.3	
N =	294	304		

POLLUTION ABATEMENT (Continued)

There has been too much concern over water pollution.

Percentage

	Survey		Net	
	First	Second	Change	
Area 1 - Friend Rural				
Agree	34.2	29.6	- 4.6	$x^2 = 0.422$
Undecided	11.4	11.1	- 0.3	at 2 df
*Disagree	54.2	59.2	+ 4.9	$p < .90$
N =	70	81		
Area 1 - Friend Town				
Agree	16.6	12.3	- 4.3	$x^2 = 2.836$
Undecided	9.2	5.8	- 3.4	at 2 df
*Disagree	74.0	81.8	+ 7.7	$p < .30$
N =	162	154		
Area 2 - Seward Rural				
Agree	18.6	35.0	+16.3	$V^2 = .0372$
Undecided	11.2	12.5	+ 1.2	$x^2 = 8.466$
*Disagree	70.0	52.5	-17.5	at 2 df
N =	107	120		$p < .02$
Area 2 - Seward Town				
Agree	13.7	11.4	- 2.3	$x^2 = 5.397$
Undecided	7.0	3.0	- 3.9	at 2 df
*Disagree	79.2	85.5	+ 6.3	$p < .10$
N =	270	263		
Area 3 - Henderson Rural				
Agree	20.3	18.8	- 1.5	$v^2 = .0111$
Undecided	9.2	16.3	+ 7.1	$x^2 = 2.570$
*Disagree	70.3	64.7	- 5.6	at 2 df
N =	108	122		$p < .30$
Area 3 - Henderson Town				
Agree	18.1	13.9	- 4.1	$x^2 = 0.850$
Undecided	9.4	9.3	- 0.1	at 2 df
*Disagree	72.4	76.7	+ 4.3	$p < .70$
N =	127	129		

There has been too much concern over water pollution. (Continued)

Percentage

	Survey		Net Change	
	First	Second		
Area 4 - Beatrice Rural				
Agree	28.7	21.9	- 6.7	$V^2 = .0165$
Undecided	6.2	13.1	+ 6.9	$x^2 + 2.837$
*Disagree	65.0	64.8	- 0.1	at 2 df
N =	80	91		$p < .30$
Area 4 - Beatrice Town				
Agree	18.0	14.4	- 3.5	$x^2 = 1.620$
Undecided	5.1	6.2	- 1.1	at 2 df
*Disagree	76.8	79.2	+ 2.4	$p < .50$
N =	295	304		

All feedlot operators should be prohibited from polluting streams.

Area 1 - Friend Rural				
*Agree	74.2	62.9	-11.3	$V^2 = .0421$
Undecided	11.4	6.1	- 5.2	$x^2 = 6.363$
Disagree	14.2	30.8	+16.5	at 2 df
N =	70	81		$p < .05$
Area 1 - Friend Town				
*Agree	87.6	88.3	+ 0.6	$V^2 = .0161$
Undecided	3.0	7.1	+ 4.0	$x^2 = 5.089$
Disagree	9.2	4.5	- 4.7	$p < .10$
N =	162	154		
Area 2 - Seward Rural				
*Agree	71.6	57.5	-14.1	$V^2 = .0223$
Undecided	9.4	12.5	+ 3.0	$x^2 = 5.061$
Disagree	18.8	30.0	+11.1	at 2 df
N =	106	120		$p < .10$
Area 2 - Seward Town				
*Agree	86.6	92.3	+ 5.7	$x^2 = 4.918$
Undecided	5.5	3.8	- 1.7	at 2 df
Disagree	7.7	3.8	- 3.9	$p < .10$
N =	270	262		

All feedlot operators should be prohibited from polluting streams.
(Continued)

	Percentage			
	Survey			
	First	Second	Net Change	
Area 3 - Henderson Rural				
*Agree	67.5	67.5	- 0.0	$x^2 = 0.451$
Undecided	9.2	11.6	+ 2.4	at 2 df
Disagree	23.1	20.8	+ 2.3	$p < .80$
N =	108	120		
Area 3 - Henderson Town				
*Agree	85.0	87.5	+ 2.5	$x^2 = 0.400$
Undecided	7.8	6.9	- 0.9	at 2 df
Disagree	7.0	5.4	- 1.6	$p < .90$
N =	127	129		
Area 4 - Beatrice Rural				
*Agree	55.5	50.4	- 5.0	$x^2 = 0.641$
Undecided	9.8	13.1	+ 3.3	at 2 df
Disagree	34.5	36.2	+ 1.7	$p < .80$
N =	81	91		
Area 4 - Beatrice Town				
*Agree	87.0	86.4	- 0.6	$x^2 = 0.103$
Undecided	4.4	4.2	- 0.1	at 2 df
Disagree	8.5	9.2	+ 0.7	$p < .95$
N =	294	303		

TAX SUPPORT FOR POLLUTION ABATEMENT AND CONSERVATION

I would rather have low taxes and low consumer prices than clean rivers.

Area 1 - Friend Rural				
Agree	22.8	20.9	- 1.8	$V^2 = .0145$
Undecided	32.8	23.4	- 9.4	$x^2 = 2.200$
*Disagree	44.2	55.5	+11.2	at 2 df
N =	70	81		$p < .50$
Area 1 - Friend Town				
Agree	20.3	16.3	- 4.0	$x^2 = 1.177$
Undecided	18.5	16.9	- 1.5	at 2 df
*Disagree	61.1	66.6	+ 5.5	$p < .70$
N =	162	153		

I would rather have low taxes and low consumer prices than clean rivers.
(Continued)

	Percentage			
	Survey		Net	
	First	Second	Change	
Area 2 - Seward Rural				
Agree	21.1	22.5	+ 1.3	$V^2 = 0.293$
Undecided	28.8	15.0	-13.8	$x^2 = 6.566$
*Disagree	50.0	62.5	+12.5	at 2 df
N =	104	120		$p < .05$
Area 2 - Seward Town				
Agree	12.6	8.7	- 3.8	$x^2 = 3.398$
Undecided	17.8	14.8	- 2.9	at 2 df
*Disagree	69.5	76.3	+ 6.8	$p < .20$
N =	269	262		
Area 3 - Henderson Rural				
Agree	23.5	19.6	- 3.9	$V^2 = .0137$
Undecided	25.4	18.0	- 7.4	$x^2 = 3.146$
*Disagree	50.9	62.2	+11.3	at 2 df
N =	106	122		$p < .30$
Area 3 - Henderson Town				
Agree	22.0	16.2	- 5.7	$x^2 = 1.420$
Undecided	14.9	17.0	+ 2.0	at 2 df
*Disagree	62.9	66.6	+ 3.6	$p < .50$
N =	127	129		
Area 4 - Beatrice Rural				
Agree	25.0	20.2	- 4.7	$V^2 = .0237$
Undecided	16.2	29.2	+12.9	$X^2 = 4.014$
*Disagree	58.7	50.5	- 8.1	at 2 df
N =	80	89		$p < .20$
Area 4 - Beatrice Town				
Agree	15.1	12.0	- 3.1	$x^2 = 2.661$
Undecided	16.8	14.0	- 2.89	at 2 df
*Disagree	67.9	74.0	+ 6.0	$p < .30$
N =	290	300		

RECREATION

We need more lakes and parks for recreation.

Percentage

	Survey First	Survey Second	Net Change	
Area 1 - Friend Rural				
*Agree	50.0	28.3	-21.6	$V^2 = .0607$
Undecided	15.7	13.5	- 2.1	$x^2 = 9.180$
Disagree	34.2	58.0	+23.7	at 2 df
N =	70	81		$p < .02$
Area 1 - Friend Town				
*Agree	52.4	49.3	- 3.1	$x^2 = 2.760$
Undecided	13.5	9.0	- 4.4	at 2 df
Disagree	33.9	41.5	+ 7.6	$p < .30$
N =	162	154		
Area 2 - Seward Rural				
*Agree	45.3	20.0	-25.3	$V^2 = .0762$
Undecided	10.1	19.1	+ 8.9	$x^2 = 17.378$
Disagree	44.4	60.8	+16.3	at 2 df
N =	108	120		$p < .001$
Area 2 - Seward Town				
*Agree	47.7	52.4	+ 4.7	$X^2 = 3.580$
Undecided	17.0	11.4	- 5.6	at 2 df
Disagree	35.1	36.1	+ 0.9	$p < .20$
N =	270	263		
Area 3 - Henderson Rural				
*Agree	36.1	39.3	+ 3.2	$V^2 = .0189$
Undecided	12.0	20.4	+ 8.4	$x^2 = 4.351$
Disagree	51.8	40.1	-11.6	at 2 df
N =	108	122		$p < .20$
Area 3 - Henderson Town				
*Agree	49.6	52.7	+ 3.1	$X^2 = 1.938$
Undecided	20.4	13.9	- 6.5	at 2 df
Disagree	29.9	33.3	+ 3.4	$p < .50$
N =	127	129		

We need more lakes and parks for recreation. (Continued)

	Percentage			
	Survey		Net	
	First	Second	Change	
Area 4 - Beatrice Rural				
*Agree	44.4	39.5	- 4.8	$x^2 = 0.640$
Undecided	11.1	9.8	- 8.7	at 2 df
Disagree	44.4	50.5	+ 6.1	$p < .80$
N =	81	91		
Area 4 - Beatrice Town				
*Agree	62.2	55.9	- 6.3	$x^2 = 4.324$
Undecided	12.5	11.1	- 1.4	at 2 df
Disagree	25.1	32.8	+ 7.7	$p < .20$
N =	294	304		

Parks should not be included in small watershed projects.

	First	Second	Net Change	
Area 1 - Friend Rural				
Agree	37.6	53.0	+15.4	$V^2 = .0363$
Undecided	28.9	14.8	-14.1	$x^2 = 5.446$
*Disagree	33.3	32.0	- 1.2	at 2 df
N =	69	81		$p < .10$
Area 1 - Friend Town				
Agree	29.6	38.3	+ 8.6	$x^2 = 3.346$
Undecided	28.3	21.4	- 6.9	at 2 df
*Disagree	41.9	40.2	- 1.7	$p < .20$
N =	162	154		
Area 2 - Seward Rural				
Agree	22.0	50.8	+18.7	$V^2 = .0487$
Undecided	16.0	18.3	+ 2.3	$x^2 = 11.011$
*Disagree	51.8	30.8	-21.0	at 2 df
N =	106	120		$p < .01$
Area 2 - Seward Town				
Agree	27.8	26.9	- 0.8	$x^2 = 1.016$
Undecided	27.8	24.7	- 3.1	at 2 df
*Disagree	44.2	48.2	+ 4.0	$p < .70$
N =	269	263		

Parks should not be included in small watershed projects. (Continued)

	Percentage			
	Survey		Net	
	First	Second	Change	
Area 3 - Henderson Rural				
Agree	59.2	40.9	-18.2	$V^2 = .0351$
Undecided	21.2	27.0	+ 5.7	$x^2 = 8.082$
*Disagree	19.4	31.9	+12.5	at 2 df
N =	108	122		$p < .02$
Area 3 - Henderson Town				
Agree	22.2	28.6	+ 6.4	$x^2 = 1.495$
Undecided	38.0	33.3	- 4.7	at 2 df
*Disagree	39.6	37.9	- 1.7	$p < .50$
N =	126	129		
Area 4 - Beatrice Rural				
Agree	50.6	34.0	-16.5	$V^2 = .0455$
Undecided	13.5	29.6	+16.0	$x^2 = 7.828$
*Disagree	35.8	36.2	+ 0.4	at 2 df
N =	81	91		$p < .02$
Area 4 - Beatrice Town				
Agree	31.6	30.1	- 1.4	$x^2 = 0.715$
Undecided	20.9	23.8	+ 2.8	at 2 df
*Disagree	47.4	46.0	- 1.4	$p < .70$
N =	291	302		

SPECIAL DISTRICTS

Organizations for conserving soil and water should be smaller than a whole watershed area.

	First	Second	Net Change	
Area 1 - Friend Rural				
Agree	44.9	56.7	+11.8	$V^2 = .0180$
Undecided	33.3	22.2	-11.1	$x^2 = 2.714$
*Disagree	21.7	20.9	- 0.7	at 2 df
N =	69	81		$p < .30$
Area 1 - Friend Town				
Agree	26.5	35.7	+ 9.1	$V^2 = .0144$
Undecided	53.0	41.5	-11.5	$x^2 = 4.555$
*Disagree	20.3	22.7	- 2.3	at 2 df
N =	162	154		$p < .20$

Organizations for conserving soil and water should be smaller than a whole watershed area. (Continued)

	Percentage			
	Survey		Net Change	
	First	Second		
Area 2 - Seward Rural				
Agree	48.5	45.0	+ 3.5	$x^2 = 1.348$
Undecided	28.9	25.8	- 3.4	at 2 df
*Disagree	22.4	29.1	+ 6.7	$p < .70$
N =	107	120		
Area 2 - Seward Town				
Agree	29.8	27.0	- 2.8	$x^2 = 2.404$
Undecided	48.5	45.5	- 2.9	at 2 df
*Disagree	21.6	27.4	+ 5.7	$p < .50$
N =	268	259		
Area 3 - Henderson Rural				
Agree	42.9	58.6	+15.6	$V^2 = .0410$
Undecided	27.1	27.2	+ 0.1	$x^2 = 9.367$
*Disagree	29.9	14.0	-15.8	at 2 df
N =	107	121		$p < .01$
Area 3 - Henderson Town				
Agree	23.6	29.4	- 5.8	$x^2 = 2.045$
Undecided	64.5	55.8	- 8.7	at 2 df
*Disagree	11.8	14.7	+ 2.9	$p < .50$
N =	127	129		
Area 4 - Beatrice Rural				
Agree	32.5	30.7	- 1.7	$x^2 = 0.354$
Undecided	28.7	32.9	+ 4.2	at 2 df
*Disagree	38.7	36.2	- 2.4	$p < .90$
N =	80	91		
Area 4 - Beatrice Town				
Agree	25.6	27.1	+ 1.4	$x^2 = 0.329$
Undecided	49.6	50.0	+ 0.3	at 2 df
*Disagree	24.6	22.8	- 1.8	$p < .90$
N =	292	302		

IRRIGATION

Reuse of irrigation water should be required by law.

Percentage

	Survey		Net	
	First	Second	Change	
Area 1 - Friend Rural				
*Agree	78.5	71.6	- 6.9	V^2 = .0248
Undecided	11.4	7.4	- 4.02	x^2 = 3.750
Disagree	10.0	20.9	+10.9	at 2 df
N =	70	81		$p < .20$
Area 1 - Friend Town				
*Agree	62.3	72.7	+10.3	V^2 = .0192
Undecided	19.1	9.7	- 9.3	x^2 = 6.092
Disagree	18.5	17.5	- 0.9	at 2 df
N =	162	154		$p < .05$
Area 2 - Seward Rural				
*Agree	73.1	73.3	+ 0.1	x^2 = 0.073
Undecided	9.2	8.3	- 0.9	at 2 df
Disagree	17.5	18.3	+ 0.7	$p < .98$
N =	108	120		
Area 2 - Seward Town				
*Agree	67.4	65.3	- 2.0	x^2 = 0.964
Undecided	21.3	20.5	- 0.8	at 2 df
Disagree	11.2	14.0	+ 2.8	$p < .70$
N =	267	263		
Area 3 - Henderson Rural				
*Agree	53.7	53.2	- 0.4	x^2 = 1.366
Undecided	9.2	13.9	+ 4.6	at 2 df
Disagree	37.0	32.7	- 4.2	$p < .70$
N =	108	122		
Area 3 - Henderson Town				
*Agree	62.9	75.0	+12.0	V^2 = .0180
Undecided	17.3	13.2	- 4.0	x^2 = 4.591
Disagree	19.6	11.7	- 7.9	at 2 df
N =	127	128		$p < .20$

Reuse of irrigation water should be required by law. (Continued)

	Percentage			
	Survey		Net	
	First	Second	Change	
Area 4 - Beatrice Rural				
*Agree	66.6	67.0	+ 0.3	$V^2 = .0142$
Undecided	9.8	16.4	+ 6.6	$x^2 = 2.454$
Disagree	23.4	16.4	- 6.9	at 2 df
N =	81	91		$p < .30$
Area 4 - Beatrice Town				
*Agree	65.4	66.7	+ 1.3	$x^2 = 0.849$
Undecided	20.5	17.7	- 2.7	at 2 df
Disagree	14.0	15.4	+ 1.4	$p < .70$
N =	292	304		

There should be no regulation of the amount of irrigation water pumped from streams.

	First	Second	Net Change	
Area 1 - Friend Rural				
Agree	5.7	6.1	+ 0.4	x^2 = Not valid
Undecided	2.8	4.9	+ 2.0	
*Disagree	91.4	88.8	+ 2.5	
N =	70	81		
Area 1 - Friend Town				
Agree	11.7	4.5	- 7.1	$V^2 = .0264$
Undecided	8.0	3.8	- 4.1	$x^2 = 8.366$
*Disagree	80.2	91.5	+11.3	at 2 df
N =	162	154		$p < .02$
Area 2 - Seward Rural				
Agree	13.8	4.1	- 9.7	$V^2 = .0294$
Undecided	4.6	5.0	+ 0.3	$x^2 = 6.716$
*Disagree	81.4	90.8	+ 9.3	at 2 df
N =	108	120		$p < .05$
Area 2 - Seward Town				
Agree	10.3	5.7	- 4.6	$x^2 = 4.403$
Undecided	4.8	3.8	- 1.0	at 2 df
*Disagree	84.8	90.4	+ 5.6	$p < .20$
N =	270	263		

There should be no regulation of the amount of irrigation water pumped from streams. (Continued)

Percentage

	Survey		Net	
	First	Second	Change	
Area 3 - Henderson Rural				
Agree	19.4	13.9	- 5.5	$x^2 = 1.287$
Undecided	12.9	13.1	+ 0.1	at 2 df
*Disagree	67.5	72.9	+ 5.3	$p < .70$
N =	108	122		
Area 3 - Henderson Town				
Agree	15.7	15.5	- 0.2	$x^2 = 0.220$
Undecided	14.1	16.2	+ 2.1	at 2 df
*Disagree	70.0	68.2	- 1.8	$p < .90$
N =	127	129		
Area 4 - Beatrice Rural				
Agree	8.6	8.8	+ 0.2	x^2 = Not valid
Undecided	4.9	5.5	+ 0.6	
*Disagree	86.4	85.5	- 0.8	
N =	81	90		
Area 4 - Beatrice Town				
Agree	8.1	9.5	+ 1.3	$x^2 = 0.999$
Undecided	7.8	9.5	+ 1.7	at 2 df
*Disagree	84.0	80.9	- 3.0	$p < .70$
N =	294	304		

Irrigators should be able to use an unlimited amount of ground water.

Area 1 - Friend Rural				
Agree	27.1	22.2	- 4.9	$x^2 = 0.640$
Undecided	8.5	7.4	- 1.1	at 2 df
*Disagree	64.2	70.3	+ 6.0	$p < .80$
N =	70	81		
Area 1 - Friend Town				
Agree	27.1	23.3	- 3.7	$V^2 = .0155$
Undecided	11.1	5.1	- 5.9	$x^2 = 4.922$
*Disagree	61.7	71.4	+ 9.7	at 2 df
N =	162	154		$p < .10$

Irrigators should be able to use an unlimited amount of ground water.

Percentage

	Survey		Net	
	First	Second	Change	
Area 2 - Seward Rural				
Agree	30.5	25.8	- 4.7	$x^2 = 1.877$
Undecided	12.0	8.3	- 3.7	at 2 df
*Disagree	57.4	65.8	+ 8.4	$p < .50$
N =	108	120		
Area 2 - Seward Town				
Agree	25.1	14.5	-10.6	$V^2 = .0198$
Undecided	7.7	6.4	- 1.2	$x^2 = 10.535$
*Disagree	67.0	79.0	+11.9	at 2 df
N =	270	262		$p < .01$
Area 3 - Henderson Rural				
Agree	37.9	40.1	+ 2.2	$x^2 = 0.272$
Undecided	5.5	6.5	- 1.0	at 2 df
*Disagree	56.4	53.2	- 3.2	$p < .90$
N =	108	122		
Area 3 - Henderson Town				
Agree	35.4	32.5	- 2.8	$x^2 = 0.603$
Undecided	9.4	7.5	- 1.8	at 2 df
*Disagree	55.1	59.6	+ 4.5	$p < .80$
N =	127	129		
Area 4 - Beatrice Rural				
Agree	17.2	23.0	+ 5.7	$x^2 = 0.908$
Undecided	11.1	10.9	- 0.1	at 2 df
*Disagree	71.6	65.9	- 5.6	$p < .70$
N =	81	91		
Area 4 - Beatrice Town				
Agree	25.3	18.7	- 6.5	$x^2 = 4.041$
Undecided	9.9	12.1	+ 2.2	at 2 df
*Disagree	64.7	69.0	+ 4.3	$p < .20$
N =	292	304		

FLOOD CONTROL

Small watershed projects are not a necessary expenditure.

	Percentage			
	Survey		Net	
	First	Second	Change	
Area 1 - Friend Rural				
Agree	20.0	17.5	- 2.5	$V^2 = .0462$
Undecided	15.7	3.7	-11.9	$x^2 = 6.935$
*Disagree	64.2	78.7	+14.4	at 2 df
N =	70	80		$p < .05$
Area 1 - Friend Town				
Agree	22.2	13.6	- 8.5	$V^2 = .0282$
Undecided	25.3	17.5	- 7.7	$x^2 = 8.941$
*Disagree	52.4	68.8	+16.3	at 2 df
N =	162	154		
Area 2 - Seward Rural				
Agree	14.0	7.5	- 6.5	$V^2 = .0214$
Undecided	7.4	3.3	- 4.1	$x^2 = 4.874$
*Disagree	78.5	89.1	- 4.1	at 2 df
N =	107	120		$p < .10$
Area 2 - Seward Town				
Agree	16.2	10.6	- 5.6	$V^2 = .0213$
Undecided	23.7	15.5	- 8.1	$x^2 = 11.380$
*Disagree	60.0	73.7	+13.7	at 2 df
N =	270	263		$p < .01$
Area 3 - Henderson Rural				
Agree	16.8	13.2	- 3.6	$x^2 = 0.658$
Undecided	13.0	12.3	- 0.6	at 2 df
*Disagree	70.0	74.3	+ 4.2	$p < .80$
N =	107	121		
Area 3 - Henderson Town				
Agree	19.6	21.7	+ 2.0	$x^2 = 0.161$
Undecided	23.6	23.2	- 0.3	at 2 df
*Disagree	56.6	55.0	- 1.6	$p < .95$
N =	127	129		

Small watershed projects are not a necessary expenditure. (Continued)

	Percentage			
	Survey		Net	
	First	Second	Change	
Area 4 - Beatrice Rural				
Agree	19.7	15.3	- 4.3	$x^2 = 0.792$
Undecided	7.4	9.8	+ 2.4	at 2 df
*Disagree	72.8	74.7	+ 1.8	$p < .70$
N =	81	91		
Area 4 - Beatrice Town				
Agree	17.6	12.5	- 5.1	$x^2 = 3.460$
Undecided	21.0	20.1	- 0.8	at 2 df
*Disagree	61.2	67.2	+ 5.9	$p < .20$
N =	294	302		

The city council should prohibit people from building on flood plains.

	First	Second	Net Change	
Area 1 - Friend Rural				
*Agree	72.8	43.7	-29.1	$V^2 = .0879$
Undecided	17.1	31.2	+14.1	$x^2 = 13.195$
Disagree	10.0	25.0	+15.0	at 2 df
N =	70	80		$p < .01$
Area 1 - Friend Town				
*Agree	62.9	71.4	+ 8.4	$V^2 = .0146$
Undecided	17.9	9.7	- 8.1	$x^2 = 4.623$
Disagree	19.1	18.8	- 0.3	at 2 df
N =	162	154		$p < .10$
Area 2 - Seward Rural				
*Agree	63.8	57.9	- 5.9	$V^2 = .0166$
Undecided	20.3	15.9	- 4.4	$x^2 = 3.778$
Disagree	15.7	26.0	+10.3	at 2 df
N =	108	119		$p < .20$
Area 2 - Seward Town				
*Agree	58.1	60.4	+ 2.3	$x^2 = 0.407$
Undecided	20.3	20.1	- 0.2	at 2 df
Disagree	21.4	19.3	- 2.0	$p < .20$
N =	270	263		

The city council should prohibit people from building on flood plains.

	Percentage			
	Survey		Net Change	
	First	Second		
Area 3 - Henderson Rural				
*Agree	58.3	54.9	- 3.4	$x^2 = 0.739$
Undecided	17.5	22.1	+ 4.5	at 2 df
Disagree	24.0	22.9	- 1.1	$p < .70$
N =	108	122		
Area 3 - Henderson Town				
*Agree	64.5	75.1	+10.6	$V^2 = .0134$
Undecided	20.4	14.7	- 5.7	$x^2 = 3.455$
Disagree	14.9	10.0	- 4.5	at 2 df
N =	127	129		$p < .20$
Area 4 - Beatrice Rural				
*Agree	55.5	56.0	+ 0.4	$x^2 = 0.717$
Undecided	18.5	21.9	+ 3.4	at 2 df
Disagree	25.9	20.8	- 5.0	$p < .70$
N =	81	90		
Area 4 - Beatrice Town				
*Agree	66.3	67.4	+ 1.1	$x^2 = 0.165$
Undecided	14.9	13.8	- 1.1	at 2 df
Disagree	18.7	18.7	+ 0.0	$p < .95$
N =	294	304		

The clearing of river channels is a waste of time and money.

Area 1 - Friend Rural				
Agree	32.8	34.5	+ 1.7	$x^2 = 1.159$
Undecided	24.2	17.2	- 7.0	at 2 df
*Disagree	42.8	48.1	+ 5.2	$p < .70$
N =	70	81		
Area 1 - Friend Town				
Agree	18.5	16.9	- 1.5	$x^2 = 1.759$
Undecided	17.9	13.0	- 4.8	at 2 df
*Disagree	63.5	69.9	+ 6.3	$p < .50$
N =	162	153		

The clearing of river channels is a waste of time and money. (Continued)

	Percentage			
	Survey		Net	
	First	Second	Change	
Area 2 - Seward Rural				
Agree	26.8	22.5	- 4.3	$x^2 = 0.748$
Undecided	10.1	9.1	- 1.0	at 2 df
*Disagree	62.9	68.3	+ 5.3	$p < .70$
N =	108	120		
Area 2 - Seward Town				
Agree	12.5	14.5	+ 1.9	$x^2 = 5.615$
Undecided	15.9	9.1	- 6.7	at 2 df
*Disagree	71.4	76.3	+ 4.8	$p < .10$
N =	270	262		
Area 3 - Henderson Rural				
Agree	25.3	17.5	- 7.7	$x^2 = 2.321$
Undecided	16.8	15.8	- 0.9	at 2 df
*Disagree	57.9	66.6	+ 8.7	$p < .50$
N =	107	120		
Area 3 - Henderson Town				
Agree	19.6	11.6	- 8.0	$V^2 = .0201$
Undecided	22.8	17.8	- 5.0	$x^2 = 5.152$
*Disagree	57.4	70.5	+13.0	at 2 df
N =	127	129		$p < .10$
Area 4 - Beatrice Rural				
Agree	28.3	29.6	+ 1.2	$x^2 = 0.033$
Undecided	12.3	12.0	- 0.2	at 2 df
*Disagree	59.2	58.2	- 1.0	$p < .99$
N =	81	91		
Area 4 - Beatrice Town				
Agree	13.6	10.5	- 3.0	$V^2 = .0107$
Undecided	16.6	10.8	- 5.8	$x^2 = 6.449$
*Disagree	69.7	78.6	+ 8.8	at 2 df
N =	294	304		$p < .05$

Large reservoirs should be constructed to protect against flood damage.

Percentage

	Survey		Net	
	First	Second	Change	
Area 1 - Friend Rural				
*Agree	65.7	61.7	- 3.9	$x^2 = 0.306$
Undecided	14.2	14.8	+ 0.5	at 2 df
Disagree	20.0	23.4	+ 3.4	$p < .90$
N =	70	81		
Area 1 - Friend Town				
*Agree	68.5	75.6	+ 7.1	$x^2 = 2.309$
Undecided	14.1	12.5	- 1.6	at 2 df
Disagree	17.2	11.8	- 5.4	$p < .50$
N =	162	152		
Area 2 - Seward Rural				
*Agree	57.6	53.7	- 3.9	$x^2 = 0.736$
Undecided	11.5	10.0	- 1.4	at 2 df
Disagree	30.7	36.1	+ 5.3	$p < .70$
N =	104	119		
Area 2 - Seward Town				
*Agree	72.5	69.9	- 2.6	$V^2 = .0112$
Undecided	19.6	15.9	- 3.6	$x^2 = 5.975$
Disagree	7.7	14.0	+ 6.2	at 2 df
N =	270	263		$p < .10$
Area 3 - Henderson Rural				
*Agree	64.8	71.4	+ 6.6	$x^2 = 1.455$
Undecided	15.7	10.9	- 4.8	at 2 df
Disagree	19.4	17.6	- 1.8	$p < .50$
N =	108	119		
Area 3 - Henderson Town				
*Agree	70.8	74.4	+ 3.5	$x^2 = 0.891$
Undecided	19.6	15.2	- 4.4	at 2 df
Disagree	9.4	10.4	+ 0.9	$p < .70$
N =	127	125		

Large reservoirs should be constructed to protect against flood damage.
(Continued)

	Percentage			
	Survey		Net	
	First	Second	Change	
Area 4 - Beatrice Rural				
*Agree	65.8	64.8	- 0.9	$V^2 = .0146$
Undecided	15.1	8.7	- 6.3	$x^2 = 2.483$
Disagree	18.9	26.3	+ 7.3	at 2 df
N =	79	91		$p < .30$
Area 4 - Beatrice Town				
*Agree	80.5	76.8	- 3.6	$x^2 = 1.271$
Undecided	12.2	15.1	+ 2.9	at 2 df
Disagree	7.1	7.9	+ 0.7	$p < .70$
N =	293	303		

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